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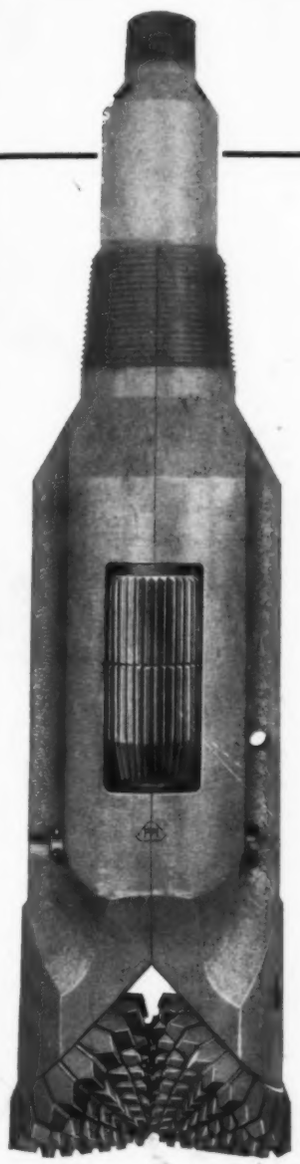
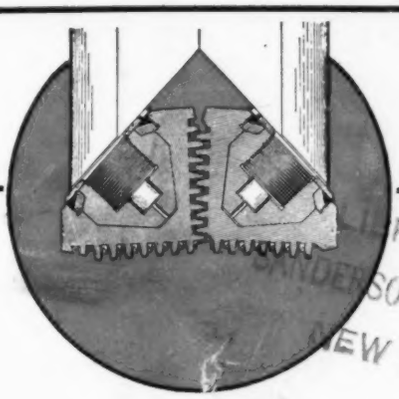
The OIL WEEKLY

April 22, 1927 Volume 45. No. 5





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SANDERSON & PORTER
NEW YORK

The Hughes "Self-Cleaning" Cone is the most important invention to the Rotary Driller since the invention of the original Hughes Rock Bit.

you will be surprised when you first use

HUGHES
"Self-Cleaning"
CONES

that you save 50% of the round trips.

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HUGHES TOOL COMPANY

Service Plants:
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HOUSTON, TEXAS

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New York City

Submitted Without Comment

Covington, Oklahoma,
Oct. 28, 1926.

10-88-WG
File: 49

Bridgeport Machine Company,
Garber, Oklahoma.

Gentlemen:

We are pleased to inform you that we have been using one of your 6 5/8" Swan Underreammers on our Brunken Number one. We have underreamed from 4377' to 4907', or a total of 530', without encountering any trouble whatever.

We might add that this is the longest string of 6 5/8" casing that has ever been underreamed to this depth in the Mid-Continent Field, and we believe that the Swan Underreammer has proven itself equal to the task.

We do practically all our work with the Swan Underreamer, and it has always proved itself superior to any other make we have used.

Yours very truly,

ROXANA PETROLEUM CORPORATION,

By: Wm Stholson
District Superintendent.

WG:CHW

THE BRIDGEPORT MACHINE COMPANY
WICHITA, KANSAS

HYCHROME GUARANTEED

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 1716 Dallas Ave., Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

Carefree Operation

AFTER ALL, the demands that you make of your pumps are very simple. All that you ask is that in addition to doing their work properly, they operate year in and year out with a *minimum of care.*

In explaining how well GASOS meet this requirement, we need only make two statements—

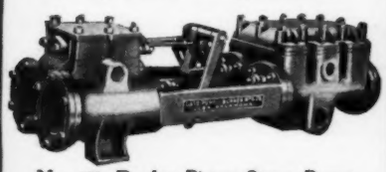
(1) GASO sales, without the aid of a high-pressure selling organization, have assumed world-wide proportions.

(2) Still another addition is being built to our plant.

Our catalog is a 64-page book of pump information. May we send you your copy?

STEAM-DRIVEN PUMPS

Correct in Design—
Long Lived—Dependable



No. 401—Duplex Piston Steam Pump (175 to 800 pounds pressure) A general service model, widely used in the handling of heavy oils. Like all Gaso models, it has *fewer* and *stronger* parts.

No 404—Gaso Duplex Piston Steam Pump for 500 to 800 pounds service. A high pressure pump, ideally suited for handling gasoline, acids, etc., under high pressure. Practically no gasket surface; *fewer* and *stronger* parts.

No. 407—Its ability to handle large capacities under high pressures has made this pump (600 to 800 pound) one of the most widely used of the Gaso line. Heavily constructed to withstand abuse. *Fewer* and *stronger* parts.

GASO PUMP & BURNER MFG. CO.
Tulsa · Oklahoma

GASO PUMPS
for every oil industry need

EMSCO

A Complete Line of Better Oil Well Equipment

EMSCO

All Steel Wheels

furnished with
WOOD CANTS
if desired

WHEN maximum safety, durability and economy are combined with the most modern improved construction, as in Emsco All-Steel Wheels, there remains no legitimate reason for using inferior types.

SAFETY Greater strength insures safety for workers. Will not "blow up" at high speeds. Emsco Superior Asbestos lagged brake bands give complete control at all times. Fire and Rust Proof.

DURABILITY Will withstand the hardest service. The steel shaft and steel brake wheel combination insures long life.

ECONOMY Longer life and minimum up-keep mean greater economy. Continuous operation with less shut-downs insures low operating costs.

Write for Descriptive Bulletin No. 4

EMSCO
Derrick & Equipment Company
of Texas
Houston, Texas
Los Angeles, California
New York Office, 150 Broadway

Emsco Band Wheels: 10-ft., 11-ft., and 12-ft. diameters, with 14-in., 16-in., and 18-in. rims. All sizes equipped with 7-ft. double grooved tug rims.

Emsco Calf Wheels: Heavy, Super, Standard, Light, Special and Special Concrete Filled Types.

Emsco Bull Wheels: Heavy, Super, Standard, Light and Special Types.

Emsco Steel Equipped Wells Are Safe

Why set casing to test a sand encountered in a rotary drilled hole when we can give you an open flow test without all this expense?

ERLE P. HALLIBURTON COMPANY
DUNCAN, OKLAHOMA

full information on request

ERLE P. HALLIBURTON COMPANY, Duncan, Oklahoma
Without obligation, please send me full details of the Halliburton Sand Tester, together with prices.
Name
Street
City
State

Magnolia Petroleum Company

Producer *Refiner* *Jobber* *Distributer*

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FUEL OIL

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DEPENDABLE
LUBRICANT

"a grade for each condition"

For satisfactory operation of Ford Cars use Magnolene Motor Oil for Fords

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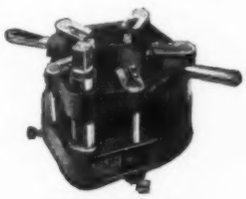
Inquiries Respectfully Solicited

A Letter from Harry G. Nye

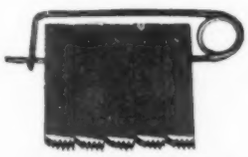
The rugged construction and few working parts account for the simplicity and durability of these Nye Receding models. They do the work easily and efficiently.

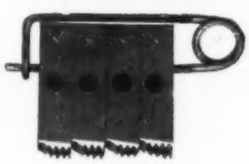
No. 1 Nye Receding Pipe Threader, complete ....$9.60 net
West of Rocky Mountains.$10.80



NYE NO. 2
Geared Threading Device Improved

Capacity 2½ to 4 in. inclusive
Net price complete $50.00
West of Rocky Mountains .. 55.00
FREE TRIAL—ABSOLUTELY GUARANTEED





Nye Chasers

Fit Nos. 1, 1A and 2 Receding Die Stocks

Each set is guaranteed in every particular. Will cut much easier than other similar dies.

No. 1, 1" to 1½" $ .75 per set net
No. 1, 2" ..... 1.25 per set net
No. 2, 2½" to 4" 3.60 per set net

Nye Drop Forged Pipe Cutter

No. 1-A ⅛ to 1¼".....$2.25 net
No. 2-A ⅛ to 2"..... 3.00 net
No. 3-A 1 to 3"..... 5.00 net

To the Oil Men of the U. S. A.

Fellow Citizens:

Well, I see that President Coolidge is going to spend his vacation in the West this year, but I don't imagine he will spend much else. Sometime I would like to see a poker game between Cal Coolidge, John D. Rockefeller and Harry Lauder. Of course it would be penny ante, but I bet it would be interesting.

Just the same I wish that some of our legislatures and common councils would get the same idea. Every time Andy Mellon pays off a bond, some supervisor or somebody slips over a couple of new ones. "Hooray!" we yell, "we're paying off the war debt!" But all the while the peace debt is getting as big as the war debt was.

Here's the figures, in round numbers: In 1919 the federal debt was $25,800,000,000, that's all. But in 1926 we had cut it down to $19,100,000,000. Hooray! But wait a minute. In 1919 the state and local debt was $6,700,000,000. In 1926 it was $12,200,000,000. Not so good. Let's see where that leaves us now:

	1919	1926
Government debt	$25,800,000,000	$19,100,000,000
State and local debt	6,700,000,000	12,200,000,000
Total	$32,500,000,000	$31,300,000,000

Good gosh, we're right about where we were! We are getting out of debt just like the celebrated frog jumping out of the celebrated well. The frog, you remember, jumped five feet, but every time he jumped five he slid back four. We are not doing as well as the frog. But we haven't got as much sense as a frog, so why should we?

But here we have been paying a whopping income tax every year, and Lord knows how much we would have paid if we had told the truth, and what's the net result? Well, after seven years all we owe now is thirty-one billion dollars instead of thirty-two. Hooray!

It isn't a matter of politics. The government debt was reduced under both a Democratic and Republican administration, and the local and state debt increased under three kinds of administration—Republican, Democratic and skirt.

Some plumbers are saving money the same way by using cheap, old-fashioned tools, when Nye tools would last longer, work faster and easier, cut down overhead and increase production and profits. Let's not fool ourselves with figures.

Yours for lower taxes and higher-grade tools,

HARRY G. NYE

Otherwise Known As

THE NYE TOOL & MACHINE WORKS
4120-30 Fullerton Avenue
Chicago, Ill.

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Nye Saunders Pipe Cutter

No. 1 .....$ 1.80 net
No. 2 ..... 2.70 net
No. 3 ..... 6.60 net
No. 4 ..... 10.80 net
No. 5 ..... 16.80 net

Nye thin blade cutter wheel, made to fit all standard makes of pipe cutters, and guaranteed against breakage in use. Made both in smooth and knurled edge.

Nye Barnes Pipe Cutters

No. 1 .....$ 2.25 net
No. 2 ..... 3.00 net
No. 3 ..... 5.00 net
No. 4 ..... 10.00 net
No. 5 ..... 15.00 net
No. 6 ..... 20.00 net

CLIMAX

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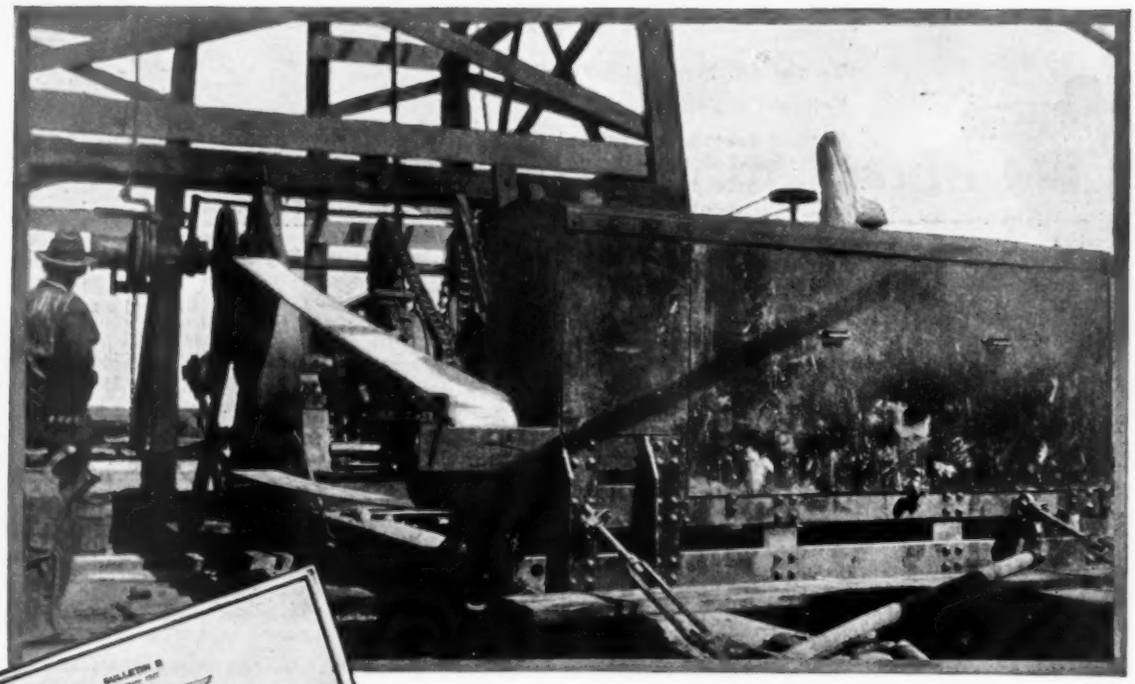
ECONOMY ROTARY DRILLING POWER



Write for
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CLIMAX ENGINEERING CO.
CLINTON, IOWA

Exclusive Foreign Oil Field Distributors:

THE NATIONAL SUPPLY CORPORATION

120 Broadway, New York, N. Y.

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Ask Any Store

THE NATIONAL SUPPLY COMPANIES

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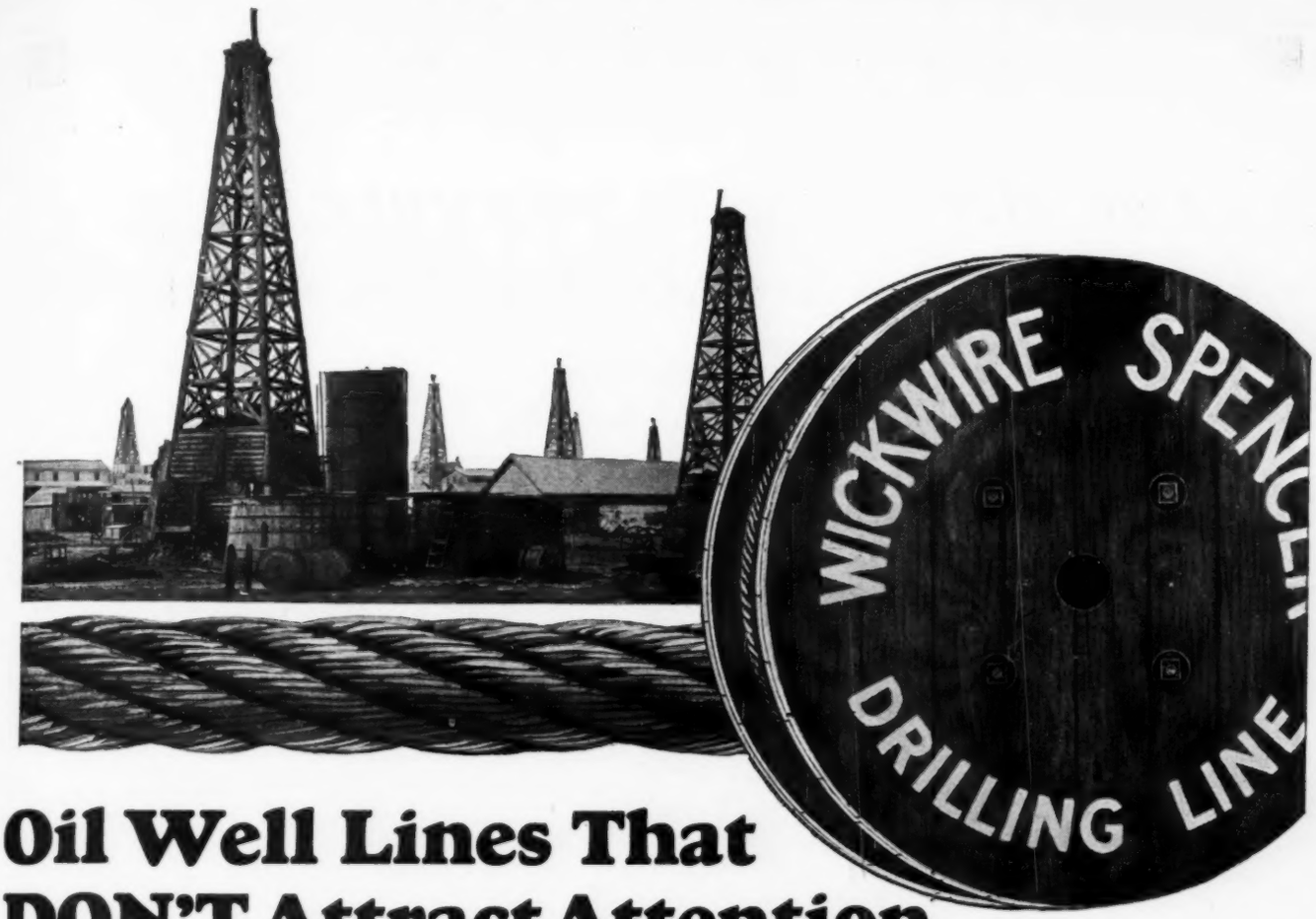

Oil Well Lines That DON'T Attract Attention

When in use Wickwire Spencer Wire Lines don't attract much attention. A good line never does. You only **notice** a line when it fails.

Wickwire Spencer Wire Lines will give you splendid service. They will add smoothness, efficiency and economy to your work.

Whether you wish drilling lines, tubing lines, casing lines, sucker rod lines, beam lines, dead lines, sand lines, pumping lines, cleaning out lines, bailing lines, swabbing lines, power lines, mandrel lines or torpedo lines, the Wickwire Spencer Steel Company makes them in the necessary combination of strength, toughness, flexibility, and elasticity.

The Wickwire Spencer Steel Company controls all processes of manufacture from the ore to the finished product.

Our interesting catalog tells you how ropes should be cared for.

Wickwire Spencer Steel Company

General Offices: 41 East Forty-second Street.
Pacific Coast Offices: Los Angeles, San Francisco, Seattle

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A. F. Keck Co., Butler, Pa.
Lloyd Smith Co., Bradford, Pa.
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G. A. Blair & Sons, Clintonville, Pa.
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Penn Pipe & Supply Co., Sheffield, Pa.
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MID-CONTINENT OIL FIELDS

Murray Tool & Supply Co., Tulsa-Cleveland, Okla.
Stock locations in Pampa, Borger, Roxanna, Best, McCamey, Eastland, Trent, Vernon, Texas.
Federal Supply & Machine Co., Augusta-Winfield, Kansas

WICKWIRE SPENCER PRODUCTS

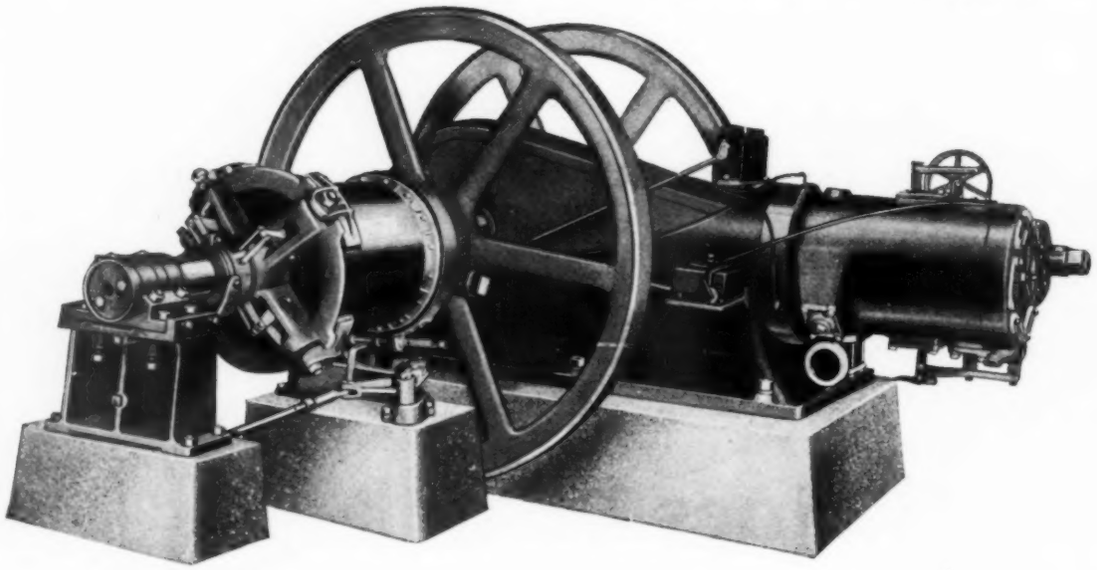
WICKWIRE SPENCER STEEL CO.,
Dept. 422-OW 41 East 42nd St., New York City.
Please send me Catalog showing Wickwire Spencer Drilling and Wire Lines and the name of your nearest distributor.

Name.....

Address.....

FOR THE TEXAS PANHANDLE FIELD

~ Reid 35 H. P. Gas Engine



LOGICAL

The Panhandle Field with its abundant supply of gas is a logical field in which to use gas engines for pumping wells. The Reid 35 HP gas engine, equipped with the Reid Reverse Clutch, Force Feed Oiler and Dust Cover—as illustrated above—is the logical gas engine to use. Why . . . . ? Because of its Power . . . . Economy . . . Reliability . . . . Long Life. Let us give you more information on these engines Write or call any of our branches or any Frick-Reid store.

JOSEPH REID GAS ENGINE CO., OIL CITY, PENNSYLVANIA, U. S. A.

BRANCHES AND AGENCIES—Marietta, Ohio; Logan, Ohio; Newark, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Frick & Lindsay Co., Bradford, Penna., and Kentucky Distributors; S. R. Shoup, 724 Board of Trade Bldg., Los Angeles, Cal.; Frick-Reid Supply Company, Tulsa, Oklahoma, and Branches, Distributors for Oklahoma, Kansas, Texas, Arkansas and Wyoming. Branch Shop, Tulsa, Oklahoma.

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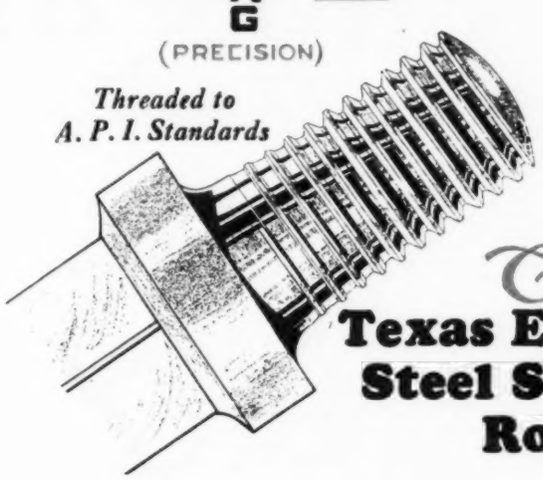
REID OIL FIELD MACHINERY

STEEL (ELECTRIC) + THREADING (A. P. I.) + MACHINING (PRECISION) =



Threaded to A. P. I. Standards

The Texas Electric Steel Sucker Rod

THAT there are several other good sucker rods on the market is NOT news to you, and it is NOT news to us.

Moreover, we know exactly how good these rods are, and we deliberately built into the *Texas Electric Steel Sucker Rod* far greater endurance.

We are able to do this because we **make** the steel that goes into these rods . . . it's *Electric Steel* of a special analysis, **and it eats up punishment.**

Greater endurance . . . proved . . . tested to YOUR satisfaction. That's the one BIG reason we have for marketing these rods.

And that's the one BIG reason you will eventually use these rods.

FROM SUPPLY HOUSES Improved Jacks, Swings and Hold Downs, Nipples and Bull Plugs, Turnbuckles and Shackle Equipment, Casing Shoes, Heads and Clamps, Steel Castings.

TEXAS STEEL CO.

ELECTRIC STEEL MAKERS, ROLLERS AND FINISHERS

FORT WORTH, TEXAS

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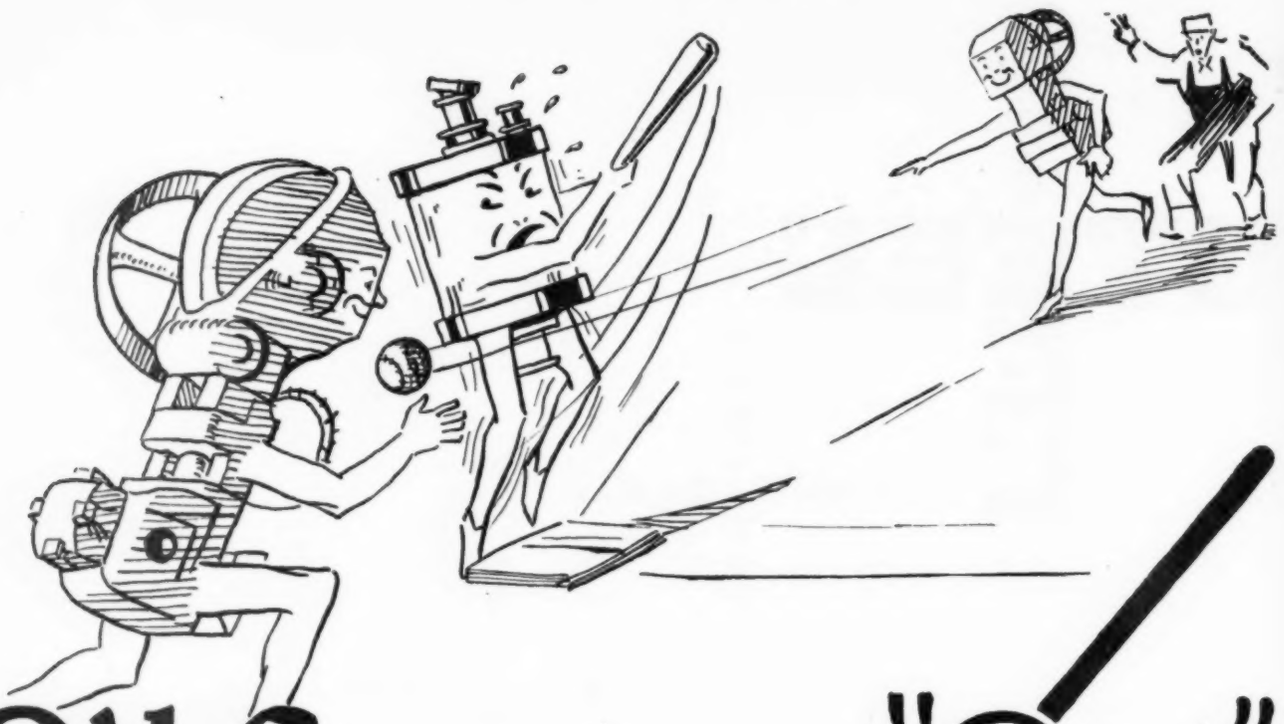

Oil Cups are "Out"

Not Needed on Gardner Pumps

The new Gardner Flood-Lubricated Pumps have put over the third strike on grease and oil cups.

No longer is it necessary to oil pumps daily, simply change oil in the crankcase ONCE A MONTH. Then forget it. Every bearing gets perfect, automatic lubrication insuring long life and few replacements.

Made in all styles and capacities. Send for Bulletin EP-3.

"Quality Builders for Over 65 Years"

THE GARDNER GOVERNOR CO.
Quincy, Illinois

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F. W. Heitmann Company, Houston,
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The Republic Supply Company of California, Stores in all principal California Oil Fields.

GARDNER

Say you saw it in The OIL WEEKLY

Devices for Speed and Economy

THE elimination of trouble—the reduction of production costs have been the inspiration back of the development of Lorraine devices. How well these devices have been received is indicated by their adoption in every field of consequence in all parts of the world. Wherever you find a wise, time-tried operator, there too, you'll find Lorraine devices on the job, cutting costs and speeding up production.

Lorraine Automatic Gas and Oil Separator.
Lorraine Two-Way Valve.
Lorraine "B & M" Stuffing Box.
Lorraine Relief Valve.
Crowell "Makesure" Cement Shoe (Lorraine Built).
Stitzinger Universal Bearing (for sand reels).
Lorraine Sucker Rod Rack.
Lorraine Multiple Flow Nipple.
Lorraine Polish Rod Clamp.

THE LORRAINE CORP.

Manufacturers and Distributors
OIL WELL SPECIALTIES
110th & Alameda Streets,
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Export Distributors:
Buck & Stoddard, 25 Broadway, New York City

SAFETY to Men and Rig Is Assured by the Surber & Buchanan Back Pressure Float Valve

Safety and Saving—two important factors in oil well operation—are promoted to the superlative by the S. & B. Back Pressure Float Valve. In relieving the load, the valve eliminates overheating the drum and the possibility of its blowing-up and line breakage going into the hole, or personal injuries, or death.

The S. & B. Back Pressure Valve saves wear and rapid deterioration of the casing line—saves wear on brake lining, blocks and equipment. It protects human life and property—it prolongs the life of your rig.

In construction, the valve is simple and built for long wear and service. It does not retard the speed of the falling pipe—but releases the load.

The S. & B. Float Valve is not an untried device—it has long ago passed the experimental stage and is in use in California and various foreign countries. Send for descriptive folder.

H. C. SMITH MFG. CO.

Whittier, California.

BRANCH OFFICES & WAREHOUSES:

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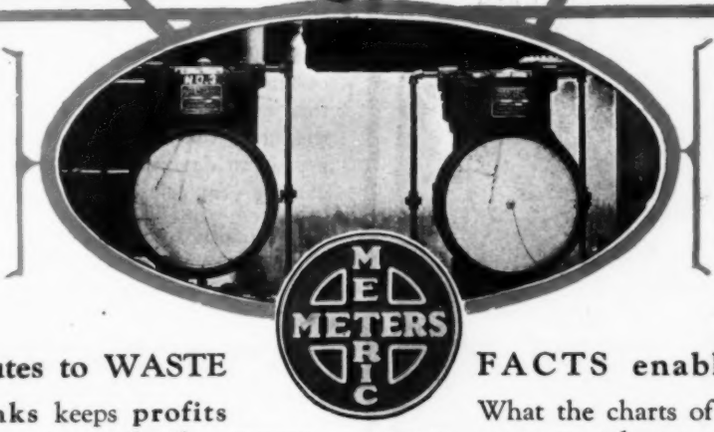
Harry B. Shine, Sales Agent, 2408 McKinney Avenue, Houston, Texas

All Supply Houses.

METRIC orifice METERS

The above view shows some of the Metric Orifice Meters used by the Amerada Petroleum Corporation in their new gasoline plant at Healdton, Oklahoma. This modern plant has thus been guarded throughout against the possibility of unknown inefficiencies by the use of the most perfect instruments of measurement adapted to this service.



In this particular installation the orifice meters measure the gas and oil in connection with the absorbers. The oil meter accurately records the mineral seal oil going in; the gas meter accurately keeps track of the gas coming out. By this arrangement these meters enable the operator to keep the plant at its maximum point of efficiency.

GUESSING contributes to WASTE

What an individual **thinks** keeps **profits** off the books of many a gas and oil company.

FACTS enable ECONOMIES

What the charts of **Metric Orifice Meters prove,** convert unknown losses back to profits.

SENTINELS guard and PROTECT

Metric Orifice Meters are being used in increasing large numbers by all types of plants handling and manipulating gas, gasoline, oil, steam and water, as their value becomes better known for detecting irregularities that thieve upon economy. More constantly and dependably do they guard every operation than is possible by other mechanism or method.

YOUR PLANT may need the ORIFICE METER

In every major operation from gas and oil production to consumption, orifice meter measurement will be justified by increased operating profits. We welcome opportunities to examine blue prints of your lines and will be glad to recommend such installations as our experience has taught to be economical.

WESTCOTT & GREIS, Inc.
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METRIC METAL WORKS

of the American Meter Company-Inc.

ERIE - PENNSYLVANIA - U-S-A

Say you saw it in The OIL WEEKLY

26 Years of ROTARY LEADERSHIP-

Among the first rotary machines used in the Spindletop field, near Beaumont, Texas, where drilling for oil by the rotary method was first successful, were machines made by the Southern Well Works, which later became the Lucey Manufacturing Corporation.

The first well was drilled by Captain A. F. Lucas and was brought in in January, 1901—just twenty-six years ago. The original Lucas well was 1139 feet deep—while the present wells in Beaumont average around 5000 feet in depth.

As the rotary method of drilling for oil was so successful at Spindletop, it led to the development of this method for drilling other oil fields, and from that date the Lucey rotary has been constantly improved in design and construction to keep pace with drilling requirements.

The modern Lucey rotary represents the experiences gained from a quarter of a century of successful manufacture of rotary drilling equipment.

LUCEY MANUFACTURING CORPORATION

Chattanooga Tenn.

DISTRIBUTORS:

LUCEY PRODUCTS CORP.

EXPORT: 3505 Woolworth Bldg., New York, N. Y.

DOMESTIC: Brady & Detroit Streets, Tulsa, Oklahoma; 416 West Eighth Street, Los Angeles, Calif.

T. T. WORD SUPPLY CO.
Houston, Texas

AGENTS: International Supply Co., Tulsa, Okla; Bradford Supply Co., Wichita Falls, Texas; George J. Hausen, Taft, Calif.

Wherever THE NAME IS A LUCEY GUARANTEE *there's Oil*

Crescent Wire Rope

for

cable tool drilling

Good crews know that Crescent Wire Rope will enable them to "make hole" quicker and with less trouble. Experience has taught them that it is easier to handle, requires less fishing and drills off and lasts longer.

REG·U·S·PAT·OFF·

Stocked in field stores by:

Jarecki Manufacturing Co. and Branches, Pittsburgh, Pa.
Jarecki Manufacturing Co. and Branches, St. Louis, Mo.
Fort Worth Well and Machinery Co., Fort Worth, Texas.
Grinnell Company of the Pacific, Los Angeles, California.
Marion Machine and Foundry Co. and Branches, Marion, Ind.

AMERICAN CABLE COMPANY
Incorporated
105 Hudson St., New York City

District Offices:
Chicago Cleveland Philadelphia Pittsburgh Tulsa
Dominion Wire Rope Co., Limited, Montreal,
Sole Canadian Manufacturers

ROUND HOISTS

The last word in Speed, Long Life and Ease of Operation

ROUND Hoists, from the raw material —pig iron—to the finished, tested products, —are made in the manufacturer's own foundries, machine shops, and chain factory, on their 16-acre site at Cleveland. Users are assured that every part that enters into a ROUND Hoist is of the best quality and workmanship that 55 years of specialization can develop.

ROUND Hoists represent the last word in speed, safety, ease of operation, and long life.

SUPERIOR Spur Geared Block (left) is recommended for high speed and efficiency. This is the leader of all chain hoists. One man can lift the full load on any size up to 10-ton. Has patented non-gagging chain guide.

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Mid-Continent Producers Expect Lower Prices

Failure of other buyers to meet Magnolia not taken as show of strength; effort to hold tank wagon prices through April

By KENT RIDLEY

EFFECTIVE April 20, Magnolia Petroleum Company announced a fourth reduction in its posted price in all fields where that company buys on a gravity basis in Texas, Oklahoma and Kansas. The cut was 10 cents per barrel, making under 33 gravity 95 cents, and carrying out the two-cent differential previously established, making 52 and above $1.35 per barrel.

This is the fourth lead in cutting taken by Magnolia since Carter Oil Company started the downward revision on February 22, the last two not being followed by any other purchasers, paralelling the situation that existed in May and June of 1924, when Magnolia made two cuts without getting universal support. On May 10, 1924, Magnolia posted a cut of 25 cents and was met immediately by Humble, but when others failed to follow, Humble recalled its reduction on May 19. On June 6 of the same year, Magnolia posted a cut of 50 cents and did not get support until July 8, when Humble posted a reduction of 25 cents. However The Texas Company began prorating runs on June 2, and Prairie and Sinclair also prorated one month after Texas started. Sinclair then made its first cut on July 12, of 25 cents, and was followed by Prairie, Gulf, Texas and Humble. Magnolia made its third 1924 cut July 26, making 33 and above $1.25, without waiting for the other companies to catch up with their cuts, and all companies did not again get on a uniform price basis until January 23, 1925.

The situation in 1924 differs from the present in that then purchasers prorated runs rather than cut the price, while now all buyers seem anxious for oil to store.

No Strength

It is common opinion with Mid-Continent oil producers that the price of their product will go still lower before any consistent recovery is begun.

Right now there are two sets of crude oil prices, as the other major buyers have not met the quotations set by the Magnolia Petroleum Company. But this is not considered evidence of any strength in the market. Oil producers know that the other major buyers could be getting oil at the Magnolia schedule, if they so desired.

In seeking an explanation of why these other buyers do not desire to buy at the Magnolia schedule, producers are putting no hope in strength. They know there is no fear of lost connections, or fear of not getting sufficient oil that is causing these concerns to go ahead paying a price higher than the Magnolia schedule.

Effective April 20, Magnolia Petroleum Company again cut crude 10 cents per barrel on all grades and at all points where that company buys on a gravity basis in Oklahoma, Kansas and Texas. The new schedule starts at 95 cents for below 33 gravity and makes, with a two-cent differential, 52 and above $1.35.

One reason advanced for the difference in schedules is that there is an effort being made to hold tank wagon prices on gasoline throughout April. Part of the effort to hold gasoline prices is to hold the crude structure in the Mid-Continent. These are only reasons that come out of considering the situation.

This belief is so well centered that predictions are frequent that both the tank wagon structure in the Middle West and the crude price in the Mid-Continent will be reduced late in April or early in May. A reduction of two cents in the tank wagon price on gasoline and a reduction of 25 cents a barrel on crude oil.

In short, Mid-Continent oil producers believe they are now receiving more for their oil than conditions warrant. Still they are not convinced that this is for their permanent good, for they anticipate involved marketing conditions in the Middle West, with possibly an influx of California gasoline by tanker to the Atlantic Seaboard.

Gasoline Market

The tendency to uphold a tank wagon market in the Middle West, when it is not justified by the group 3 refinery market is considered a condition that will invite price cutting, possibly the entry of States and cities into the business of dispensing gasoline. This, should it come, will react to the detriment of the oil producer, since it will leave conditions where rapid recovery is impossible.

As for California, the memory of what gasoline from there did in past years is not forgotten. Last year saw a regrouping of the California concerns, many of which passed into control of those with interests in the Mid-Continent. But none of these connections is considered of sufficient importance to prevent gasoline from the Pacific Coast being delivered to the Atlantic Seaboard, when prices permit a profit. Mid-Continent producers also are being told of the absence of tankers. But that does not satisfy. When tank wagon prices are high on the Atlantic Seaboard and its adjacent territory and gasoline prices are sufficiently low on the Pacific, it is but logical to expect the product to move to the favored locality.

What Mid-Continent oil producers would like to have right now is the logical adjustment of both crude oil

DETAILS ON CRITICAL FIELDS

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	No. Producing Wells	Daily Production Barrels	Daily Production Per Well	Rigs Up	Wells Drilling
PANHANDLE—								
Hutchinson County	899	475,065	528	850	99,030	117	32	163
Carson County ..	109	36,720	337	102	8,830	87	6	62
Gray County	119	31,635	266	117	8,020	69	6	41
Wheeler County	26	9,720	374	23	2,630	114	2	29
Totals	1,153	553,140	479	1,092	118,510	109	46	925
WEST TEXAS—								
Church & Fields	45	55,420	1,232	44	27,800	632	11	28
Gulf-McElroy . ..	15	17,605	1,174	15	10,235	682	..	5
Totals	60	73,025	1,217	59	38,035	645	11	33
OKLAHOMA—								
Seminole District	401	444,656	1,108	349	332,950	954	55	340
CALIFORNIA—								
Seal Beach	34	49,847	1,466	27	34,850	1,331	38	125

ed, they believe a lot of price wars in gasoline selling territory could be avoided. With gasoline prices at tank wagon sufficiently low, they know California gasoline will not be delivered at the Atlantic Seaboard.

Quick and logical adjustment of the whole price structure is looked upon as the quickest means of putting the crude price structure on the upgrade.

Refined market prices have discounted the fourth cut in crude prices in anticipation of the reduction made April 7 by Magnolia becoming general, and the failure of such action to take place has placed the refiners in the Mid-Continent district on a narrow margin of profit, if any. Magnolia's crude price schedules are not recognized as the established market in crude buying circles, and refiners will not receive the benefits of the lower crude prices until Prairie, Texas, or Humble make a change.

North Texas plant owners have curtailed crude runs, and a few plants have announced shutdown plans as soon as present crude stocks are consumed, owing to the dull market and low prices on refined products. The slump in the fuel oil market has been especially felt by the North Texas refiners, and $1 per barrel is the current market for this product in Wichita Falls and Burkburnett. U. S. motor grade of gasoline has found the market lagging with prices at a fraction above six cents, while kerosene is becoming plentiful at four cents per gallon.

The unsatisfactory condition of the refiner market in general has not checked premium payments in North Texas, and refiners seeking outside oil for spot delivery, or for contract on daily runs for a specified period are confronted with a minimum bonus of 10 cents above the market price posted by Prairie and Texas. A number of refiners have become more active for crude in the North Texas district, lately, while the supply has been decreased owing to a number of producers holding crude in storage for better prices.

Panhandle Line Starts

Texas Panhandle crude started moving Friday at the rate of 24,000 barrels daily through the Gulf-Magnolia 10-inch trunk line, which is the first to be completed into the district, and Prairie and Humble are scheduled to have their lines in operation late next month. The crude market situation in the Texas Panhandle is expected to prices and tank wagon gasoline prices. With the whole price structure adjust-stiffen somewhat upon the completion of these three direct pipe line outlets, and producers are looking forward to a larger premium from independent buyers in the district. A five cent premium is available for any quantity of Panhandle crude at present.

The Nocona shallow field in upper Montague County, Texas, is to be given a fourth direct pipe line outlet through the construction of a 50 mile four-inch line by the Continental Oil Company to its refinery at Wichita Falls. This field is averaging about 12,500 barrels daily, and is served by Humble, Sinclair and Prairie. Continental's current production in the field is 4950 barrels, and an ample number of proven locations are available to maintain this level for a long period, while the production decline average for the field is somewhat slow, as compared to other North Texas fields.

American Petroleum Institute estimates on United States production for the week ending April 16 shows the daily average at 2,452,500, a decrease of 25,800 barrels under that of the previous week. The drop is inidcated as only temporary except for a gradual decrease which has been under way for the past two weeks in fields over the country generally. However, the strong slump for the past week results mainly from floods through the Mid-Continent territory being a menace to regular production in many cases. An example of the production shortage in the week's average is that Smackover heavy district, which has been under a slow decline for the past 20 months amounting to something like 500 barrels loss per week, declined more than 6000 barrels during the past week. Seminole proper showed a loss of 11,000 barrels as a result of high water.

Every section in the country contributed to the decline except Louisiana, with a 100-barrel gain in the north and 350-barrel gain in the south, the Eastern States, with 1500 barrels increase, and the Rocky Mountain area, with a 250 barrel gain.

Many fluctuations occurred in California fields, which in the end resulted in a 1300 barrel loss. As a result of a sharp drop in Spindle Top during the early part of the week, the Gulf Coast was down 5200 barrels in the face of the slight gain in the Louisiana side. Losses caused chiefly by floods during the week amounted to 10,600 barrels in Oklahoma, 3150 barrels in Kansas and 6900 barrels in Arkansas. Texas, outside of the Gulf Coast, was down 700 barrels for the week.

California

Casinbhead gasoline business in California is in a worse plight today than it has been for a number of years. It is reported the Union Oil Company has been offered casinghead gas at 6½ cents off the market on a three-year contract and laughed at the offer. One major retailer is not in a position to cancel cantracts in a certain locailty, but rather than accept the gasoline under present market conditions, is allowing the manufacturer to dispose of it to whom he will and in addition is paying the manufacturer 2 cents per gallon for making the disposition.

The condition of the gasoline market in California is equally precarious. April 15, Standard Oil Company of California was retailing gasoline in the Los Angeles Basin at 12½ cents. The others of any consequence will have to swing into line with this price. While the schedule will allow the Standard a small profit margin, necessarily it must go hard with the small operators. As a rule, a plant in the Basin which manufactures gasoline for a cost of 8½ cents per gallon is considered efficiently operated. Up north of the Basin, 10½ cents per gallon is considered cheap production. This cost in proportion to the retail market value narrows the profit margin down to a dangerous point. Those with cash reserves insufficient to tide them over the price war will be listed among the casualties unless the condition changes soon. There are no prospects of it doing so immediately.

It is said on the street that the bone of contention in the price war is the Richfield Oil Company, which has established itself as a formidable retailing organization. Richfield is burdened with possession of contracts to purchase considerable daily crude production at prices far above the present market. Its cash reserve at present is not known. The Standard's cash position at the end of December 31, 1926, however, was greater than its total liabilities.

Those watching the crude market in California are inclined to believe it will hold at the present low position for quite a while, at least until the potentialities of Seal Beach have been determined more thoroughly.

Spindletop Production Takes Upturn

Beaumont, Texas. — Yount-Lee Oil Company's Fee 24, located in the western edge of Spindle Top's deep sand area on a nine-acre tract, flowed natural Sunday afternoon 260 barrels an hour, the best producer completed in the field this year. This well brought production back above the 50,000 barrel mark after a hurried decline in the past 10 days had run the daily yield to 44,000 barrels. The daily average for the week ending Saturday was 50,793 barrels, and production for Monday of this week was 48,472 barrels. Depth of Fee 24 is 4450 feet, and production is believed to be coming from the whale sand, which has given up some of the field's best flush production.

Rio Bravo Oil Company's T. & N. O. 2, the second well drilled on the right-of-way tract on the east side of the deep sand territory, passed the million barrel mark Monday of this week. This well was completed July 26, 1926, flowing 9500 barrels from 2715 feet. Gravity of the oil is 27.6 Baume. It holds the record for the best producer in the field.

Gulf brought in its Phoenix 85 at Hull Saturday flowing 4000 barrels from 3400 feet as the best producer in this pool since early last fall, and brought the field's average temporarily to above 20,000 barrels.

Some Sub-Surface Problems of Applied Thermodynamics

By W. H. OSGOOD
Casper, Wyoming

THERMODYNAMICS as a science in the applied rather than the abstract sense, deals with "Calculations about heat as a form of energy, and about work, another related form, both of them in connection with changes in the condition of all sorts of substances that may give or take heat, and perform or receive work while changing condition—". (Lucke: Engineering Thermodynamics).

The application of the principles of this science to the surface equipment and operation of an oil field is comparatively well worked out and the practices standardized, as can be seen in such matters as compressor installations for air, wet and dry gas and vacuum pump work; in absorption processes; in installation for primary power generation by steam, gas and oil; heating and cooling apparatus and numerous other cases of common observation. Most of these applications are but specialized developments of some previous experience gained in the realm of engineering practice and while the efficiencies and economies may not in some cases measure up to the values obtained in some other industries, the reason may be found in the lack of necessity therefor; when the material or economic need appears, the efficiencies will respond.

The application of the principles of this science to subsurface problems has just commenced. It is to be seen in the application to restore pressure to the oil sands, to secure the "drive effects" from the applied pressure of compressed air or gas and in the application of the air or gas "lift." But even before these specific applications were made, the principles of thermodynamics were operative in the flowing oil and gas wells and in the surface movements of these substances.

Leaving out of consideration the so-called present day applications, a few examples of the principles which have been operative since 1859 will be given. And, as the work of moving the oil either through the sand or up a well's casing or tubing is performed mainly by the expansion of the accompanying gas, the action of this gas will be considered.

A given weight of gas in expanding from a high pressure to a lower pressure, increases its volume; this volumetric increase, taking place against any external resistance such as the pressure of the atmosphere or of a column of fluid, performs an amount of work which varies with the existing conditions and with the method of expansion. For this expansion to take place there must be an available supply of heat, either external or internal to the expanding gas.

"Work done by a substance is always done at the expense of its heat, and while doing work the substance may be receiving heat or it may not. If no heat is being added at the time the work is being done, that work is derived directly from the heat content of the substance and as a consequence the heat content is lessened or the energy reduced by an amount exactly equivalent to the work done. Should heat be added while work is being done, the change in the energy content of the substance is the difference between the heat added and work simultaneously done."

In the case of an expansion taking place where external heat is supplied to exactly replenish the internal heat which has been converted into the work of expansion, the temperature of the gas will remain constant and the expansion is called *isothermal*. Therefore, when gases expand isothermally the heat added is equal to the work done in the same units or the work done in foot-pounds is equal to the heat added in foot-pounds. This is equivalent to saying that the internal energy remains constant and heat is converted directly and completely into work as fast as added during isothermal expansion.

Adiabatic Expansion

In the case of an expansion taking place where heat is neither received from nor given out to any outside substance, the work of expansion is done entirely at the cost of the internal energy of the gas and consequent upon this extraction of heat, the temperature of the gas falls during expansion. This style of expansion is called *adiabatic*.

In practice neither of these types of expansion exist; the actual expansion may approach either ideal type depending upon the existing conditions, but as far as an oil or gas well is concerned, the process is intermediate to the two ideal types; the name "exponential" expansion being given to this general intermediate type. For instance, a dry gas well blowing to the atmosphere will approach the adiabatic type of expansion because the velocity is so great that the mass of the gas will have very little time in which to either give up or receive any heat from the casing, tubing or surrounding formations; the work of the expansion is therefore accomplished by the expenditure of the internal energy of the gas and this extraction of heat from the mass of the gas causes a lowering of its temperature. On the other hand, a well producing oil with a low gas-oil ratio or gas factor, approaches the isothermal type of expansion because the flow is at a much lower velocity and as the work of expansion is performed by the entrained gas which during the process is surrounded or rather contained in the mass of oil; the heat necessary to accomplish the work of expansion is taken from the body of oil rather than from the gas itself; there will result in practice, a slight lowering of the temperature of the system—the mixture of gas and oil—but practically this will be the nearest approach to the isothermal type, which, as stated above, means a constant temperature process. In the vast majority of actual cases in practice, the expansion is of the exponential type; that is, it is intermediate in type between the two ideals; the proportion of gas to oil will vary in degree from just enough gas in the oil to cause a flow, to the case where the finest kind of a mist of oil is present in a large flow of gas.

In order to apply these principles to working conditions and utilize the ideas, the quantitative relationships as adopted from Lucke's "Engineering Thermodynamics" will now be stated. Anyone interested in the derivations or mathematical relationships of the following equations is referred to that work.

The following notation will be used throughout this article:

V_a= (Smallest vol.) initial volume of gas in cu. ft.

V_b= (Largest vol.) final volume of gas in cu. ft.

P_a= (Highest pressure), initial pressure of gas in lbs. per sq. ft. abs.

P_b= (Lowest pressure), final pressure of gas in lbs. per sq. ft. abs.

W=Work in ft. lbs.

K=A constant.

T_a=Temperature degrees F. absolute for state (a).

T_b=Temperature degrees F. absolute for state (b).

R=The gas constant. ($=P_aV_a/M\,T_a$)

M=Weight.

"Any thing given quantity of gas or vapor confined and not subject to extraordinary thermal changes, such as explosion, will suffer regular pressure changes for each unit of volume change, or conversely, suffer a regular volume change for each unit of pressure change, so that pressure change is dependent on volume change and vice versa. When the volume of a mass of gas or vapor V_a, is allowed to increase to V_b ----, the pressure will regularly -- decrease from P_a to P_b, and experience has shown that no matter what the gas or vapor or the thermal conditions, if steady, the volumes and pressures will have the relation for the same mass,

$$P_aV_a^s = P_bV_b^s = K.$$

or the production of the pressure and s power of the volume of a given mass will always be the same. The exponent s may have any value, but usually lies between 1 and 1.5 for conditions met in practice.

The precise value of s for any given case depends on:

(a) The substance.

(b) The thermal conditions surround-

ing expansion or compression, s being different if the substance receives heat from, or loses heat to, external surroundings, or neither receives nor loses heat.

(c) The condition of vapors as to moisture or superheat when vapors are under treatment.

Some commonly used values of s for various substances subjected to different thermal conditions during expansion are given in Table 1. s=1.25 will be used here, though its value varies with each gas.

TABLE 1.

Values of s in the equation PV^s = Constant for various substances and conditions.

From Lucke.
(With Additions.)

Substance	Type of Expansion	s
All gases	Isothermal	1.000
Air	Adiabatic	1.407
Carbon Dioxide (CO_2)	"	1.300
Hydrogen (H_2)	"	1.410
Hydrogen Sulphide (H_2S)	"	1.276
Methane (CH_4)	"	1.316
Nitrogen (N_2)	"	1.410
Typical dry natural gases	"	1.20 to 1.29

From the above equation and others, the relationships between the various quantities, pressure, volume and temperature, have been derived and are shown in Table 2.

TABLE II

Related Quantities for Exponential and Adiabatic Changes in Gases and Dry Vapors.	General Exponential Change
P and V	$\frac{P_a}{P_b}=\left(\frac{V_b}{V_a}\right)^s \quad \frac{V_a}{V_b}=\left(\frac{P_b}{P_a}\right)^{\frac{1}{s}}$
P and T	$\frac{P_a}{P_b}=\left(\frac{T_a}{T_b}\right)^{\frac{s}{s-1}} \quad \frac{T_a}{T_b}=\left(\frac{P_a}{P_b}\right)^{\frac{s-1}{s}}$
V and T	$\frac{V_a}{V_b}=\left(\frac{T_b}{T_a}\right)^{\frac{1}{s-1}} \quad \frac{T_a}{T_b}=\left(\frac{V_b}{V_a}\right)^{s-1}$

These equations apply to all possible changes and types of expansion, by using the proper value for s. For isothermal expansion s=1 and therefore those equations containing T automatically drop out.

The general equations involving the item of work are as follows:

Isothermal expansion (s=1):

$$W=K\log_e\left(\frac{V_b}{V_a}\right)=K\log_e\left(\frac{P_a}{P_b}\right)$$

where $K=P_aV_a=P_bV_b$

Exponential expansion (s=1):

$$W=\frac{P_bV_b}{s-1}\left\{\left(\frac{V_b}{V_a}\right)^{s-1}-1\right\}$$

$$W=\frac{P_bV_b}{s-1}\left\{\left(\frac{P_a}{P_b}\right)^{\frac{s-1}{s}}-1\right\}$$

$$W=\frac{P_aV_a}{s-1}\left\{1-\left(\frac{V_a}{V_b}\right)^{s-1}\right\}$$

$$W=\frac{P_aV_a}{s-1}\left\{1-\left(\frac{P_b}{P_a}\right)^{\frac{s-1}{s}}\right\}$$

The following examples are summarized as typical applications that were made in the study of conditions in a certain field. The examples are intended to show only the use of the thermodynamic principles; the modifications found necessary in the practical field use thereof have been omitted for these modifications will vary from field to field or well to well.

For this work the following conditions are assumed to exist so as to permit all calculations being made on a common basis.

Elevation of field=5000′.

Standard atmospheric pressure=12.3 lbs. per sq. in.

Back pressure=30 lbs. gauge.

$P_b=(30+12.3)\times144=6091$ lbs. per sq. ft.

Gravity of the oil=35° Be. Sp. Gr.=0.850.

The wells are 3000 ft deep.

Initial rock pressure=1000 lbs. per sq. in.

Present rock pressure=500 lbs. per sq. in.

$P_a=(500+12.3)144=73{,}771$ lbs. per sq. ft.

Sp. Gr. of gas=0.695 (Air=1).

Density
(lbs./cu. ft.)=0.0444
Cu. ft/lb.=22.5
at 12.3 lbs. and 60°F.

(1) Comparison Between Gas and Air As Lifting Agents

The work done by the same *weight* of gas in comparison to air in expanding from a pressure of P_a to a pressure of P_b isothermally, will be in the ratio of the gas and air constants, that is:

$$\frac{\text{Work (of 1 lb.) air}}{\text{Work (of 1 lb.) gas}}=\frac{R\text{ (air)}}{R\text{ (gas)}}$$

Since R (air)=53.34 and R (gas) varies according to the gas analysis but for the assumed gas will be taken as 85.7, it will be seen that the work done by air will be 53.34/85.7, of the work done by the gas or:

Work (per lb.) air=0.622 work (per lb.) gas.

To change to terms of *volumes* which are used in oil and gas work, at the temperature "T" at which the isothermal expansion takes place, assumed to be standard temperature of 60° F. in both cases, and at an atmospheric pressure of 12.3 lbs.

1 lb. air=14.8 cu. ft. (approximately).
1 lb. gas=22.5 cu. ft. (approximately).

Therefore the work done per cu. ft. of air equals, in terms of the work done by gas:

(22.5/14.8)x0.622=0.95 or

Work (per cu. ft.) (air=0.95 work (per cu. ft.) gas.

Summary of Example (1)

To use the particular natural gas considered here and under the assumed conditions, 5 per cent more work would be done by it than by the same volume of air. This relationship will vary with the existing pressures, with the characteristics of the different possible gases and will be different at different working temperatures.

(2) Gas-Oil Ratio at the Top and Bottom of a Well

Assume that the well produces 1440 barrels of oil per day (1 bbl. per minute), and 1,440,000 cubic feet of gas per day. The gas factor is 1000; 1000 cubic feet of gas, atmospheric standard, is produced with each barrel of oil at the top. A back pressure of 30 pounds will be used.

This 1000 cubic feet of "free" gas will then have at the well head, a volume of:

$V_a=(P_b/P_a)\ V_b=(12.3/42.3)\ 1000=291$ cu. ft.

The 291 cubic feet of gas at the well head will result after an ideal isothermal expansion, from a volume of $V_a=(P_b/P_a)\ V_b=(42.3/512.3)\ 291=24$ cubic feet of gas having entered the well from the sand.

The 291 cubic feet of gas at the well head will result, after an exponential expansion for s=1.25, from an initial volume: $V_a=V_b\ (P_b/P_a)^{1/s}=291\ (1/12.1)^{0.8}=39.6$ cubic feet of gas entering the well from the sand.

Summary of Example (2)

What may be called the "Sand Gas Factor" will be 24 for the isothermal expansion and 39.6 for the exponential expansion. Then if the flow can be controlled to the extent of regulating the type of expansion obtained, there could be secured a saving, in this case, of 15.6 cubic feet of the high pressure gas and the energy that it represents, in the sand. From this the effects on ultimate recovery can be realized.

(3) Gas-Oil Ratio at the Top of a Well

This example, while similar to the preceding one, will consider the amounts of gas produced with a barrel of oil at the surface, assuming that the same amount enters the well from the sand, for the cases of the two types of expansion. These data can be derived directly from Example (2) but will be figured out in detail for a rock pressure of 500 pounds and the back pressure of 30 pounds. Assume that 25 cubic feet of high pressure gas enters with each barrel of oil, this figure being well within the theoretical solubility limits of a barrel of oil at this pressure.

After isothermal expansion, this initial volume of gas will amount to: $V_b=(P_aP_b)\ V_a=(512.3/42.3)\ 25=303$ cu. ft.

After exponential expansion for s=1.25: $V_b=V_a\ (P_aP_b)^{1/s}=25\ (12.1)^{0.8}=184$ cu. ft.

Summary of Example (3)

Starting with the same amount of gas entering the hole with the oil, the isothermal expansion will cause a greater increase in volume and will therefore do more work per cubic feet of gas taken from the sand. In other words, even with a higher gas factor and, according to the published viewpoint of some authorities a consequent more inefficient production of oil, more work is accomplished for the expenditure of the same amount of gas by the isothermal expansion. As long as the gas factor is measured at the well head rather than at the

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Industry Asked For Knowledge On Corrosion Problems

Institute committee seeks all available data in questionnaire. All are invited to participate

NEW YORK.—As a preliminary step in the organization of its work of studying problems of corrosion, the temporary committee appointed by the American Petroleum Institute last February is now sending out questionnaires to representative companies seeking all available information on this subject. The entire industry is invited to participate in the work and the Institute agrees that in compiling the information the identity of the company will not be disclosed unless special permission is granted.

It is hoped that sufficient data can be obtained in this manner to form a basis from which the committee can organize and direct its future activity.

The committee would like to receive as many answers to its questionnaires by May 15 in order that a report can be prepared in time to be submitted at a meeting of the committee in June.

Frank N. Speller is chairman of the temporary committee and all replies should be addressed to him at 1810 Frick Building, Pittsburgh, Pa.

The questionnaire is as follows:

Production Problems

1. Please give an approximate estimate of the annual loss *due to corrosion* in the operations of wells by your company. This should include (a) replacement charges due to failure of any part of well equipment including gathering lines, pumps, valves, screens, liners, tubing, etc.; (b) estimated loss of production due to temporary shutdown or loss of wells; (c) annual depreciation of equipment due to corrosion. State sizes of equipment referred to.

2. Give similar information with respect to storage tanks including (a) cost of maintenance per annum (incluing labor, material, painting, etc.), (b) annual depreciation by corrosion; (c) what parts of the tanks suffer most?

Give number and sizes of tanks.

3. List in order of importance the outstanding corrosion problems and the parts of oil well equipment which suffer mostly from corrosion.

4. State what has been done by your company to reduce corrosion and the results in percentage increase in life of equipment. What is present average life of each kind of equipment subject to corrosion.

5. To what cause do you attribute the corrosion in each case.

Transportation Problems

1. Give estimated cost, due to corrosion of pipe line including (a) renewal of pipe and pipe coatings; (b) lost operating time due to failure of lines and repears; (c) estimated annual depreciation.

State mileage of each size. State approximately per cent of length of your lines seriously affected by corrosion.

2. Give similar data with respect to storage tanks (average per tank per year) including (a) cost of maintenance (including labor, material, painting, etc.); (b) annual depreciation by corrosion.

What parts of the tanks suffer most in your district. Give number and sizes of tanks in your system.

3. State what has been done by your company to protect pipe lines in various kinds of soil and how much you estimate this protection has lengthened the life of your lines.

4. List marine and tank car corrosion problems in order of importance and state what has been done to reduce such depreciation.

Refinery, Manufacturing and Natural Gasoline Plant Problems

1. Please give an approximate estimate of total annual loss in your refineries due to corrosion on the basis of 1000 barrels of crude oil charged per day. This should include (a) maintenance charges (b) lost time due to corrosion repairs and equipment failures, and (c) average physical depreciation per annum from this cause, not covered by maintenance.

2. List in order of importance the outstanding corrosion problems of equipment which suffers most by corrosion with reference to various refining operations.

3. What has been done by your company to combat corrosion and what results have been obtained in percentage extension of the life of equipment in the various departments by the use of such preventive measures? What is the present average life of each kind of refinery equipment referred to above subject to corrosion?

General

1. The committee would like to know of any experimental work being carried on or contemplated by your company on these problems.

2. Describe any system of records being kept by your company on the corrosion of equipment.

3. Give list of names of technical societies or other organizations working on this problem with whom you have affiliations.

4. The committee would particularly like to have a carefully prepared list of corrosion problems relating to each department (sections I, II and III above) with these problems arranged in order of importance.

Special Light Rig for La Barge Drilling

Casper, Wyo.—A special rotary drilling outfit has been designed for the California Petroleum Company for use in the La Barge field. It is a portable affair and can be easily moved to the 74-foot special steel rigs to be used. The outfit is manufactured to specifications by the E. M. Smith Company. The company will use a two-cylinder steam engine with the outfit. A shallow well can be completed in the field in less than two weeks' time, it is thought.

SUMMARY

Data on the Corrosion Problem in the Oil and Gas Industry.

Name of Company ..... Date.....

Expense due to Corrosion and extent of equipment involved.

Department	Present Annual Cost	General Magnitude of Equipment Involved						
		Oil & Gas Wells		Pipe Lines except station		Tanks, Tank Ships Barges, Etc.	Refineries, Manufacturing plants, Natural Gaso. plants.	Power Plants and Miscellaneous
		No.	Avg. Depth	Miles	Avg. Size	Bbls.	Bbls.	
Producing								
Transportation								
Refining and Manufacturing								
Marketing								
Total								

NOTE: It is understood that the information given below is only roughly approximate. Names of companies supplying data will not be disclosed unless special permission is obtained to do so from such companies.

Gas Men Discuss Storage and Transportation

Open forum at Southwest meeting at Dallas brings out valuable points on cleaning gas and preserving lines

By A. R. McTEE
Staff Representative

DALLAS, Texas.—Excellent cross-sections of the problems met in the gas industry were developed through discussions which made up a part of the program carried out at the second annual meeting of the Southwest Division of the Natural Gas Association of America, held here last week. After each written paper there was a roundtable discussion, and on the second day the entire meeting was turned into an open forum. These gave the meeting a very practical turn, inasmuch as they dealt with situations which the various companies have overcome or are now handling.

Cleaning gas in transportation lines involves the expenditure of large sums of money annually, and the remarks on this subject, led by Walter Reid, consulting engineer of Dallas, were eagerly received.

Mr. Reid pointed out that mill scale, pipe rust, dirt from wells, etc., can generally be removed by the ordinary type of scrubber, provided the material has not been carried far along the line. If it has traveled far enough to be ground into fine powder, however, such solid matter presents extreme complications. Filters filled with curled hair, tree moss, and patented substances are used throughout the eastern territory with success, but have not been satisfactory in the Mid-Continent.

Special scrubbers have been developed in the Kansas, Oklahoma and Texas fields, the most efficient of which is one perfected by the Empire Gas and Fuel Company, Bartlesville, Okla. This device mixes the gas with liquid and then removes the liquid, leaving the gas clean.

Scrubbers

E. A. Clark, of the Oklahoma Natural Gas Corporation, gave the experience of his company and stated that dry scrubbers had been used with some satisfaction. The scrubbers are packed with some substance that slows down the velocity of the gas, generally curled hair. Mr. Clark agreed, however, that best results are secured with the wet type of scrubber, that is, the type where the gas is forced into contact with a liquid, oil or water, generally oil, and then the liquid removed.

In the Gulf Coast country, water is used in the scrubbers.

The scrubber developed by the Empire Gas and Fuel Company consists of a cylindrical shell with inlet connections near the bottom. The shell has a perforated partition inside. Gas is thrown against the shell in a centrifugal motion and mixed with the oil. It is claimed that the efficiency of this scrubber is practically 100 per cent.

A representative of the Lone Star Gas Company, Dallas, described experiments made by his company, using the scrubber as perfected by the Empire Company. A few changes were made on the Lone Star installations, but the scrubber gave the same efficiency as with the Empire Company. The Lone Star Company obtained best results with water. It was found when oil was used that its volume increased and upon examination the company learned that the scrubber was acting as an absorption plant and the oil taking up the gasoline in the gas. This made it necessary to change to water.

Line Corrosion

Owing to the absence of John Crout, of the Gas Service Company, Kansas City, Mo., E. A. Clark led the discussion on pipe line corrosion. Mr. Clark detailed methods used by his company, the Oklahoma Natural Gas Corporation, Tulsa, in taking steps to prevent corrosion. He stated that as pipe comes from the factory, it is put through a furnace and heated to red heat. The pipe is then brushed clean and given a soda bath. After the pipe cools, a priming coat is put on and then a coat of some bituminous covering.

For pipe that cannot be brought to the furnace, a cleaning machine is used to remove rust, scale, etc., before the priming and final coat are applied.

Mr. Clark emphasized the necessity for pipe being absolutely dry before any paint is put on. Heating is a big aid in securing dryness.

It was brought out by a representative of the Empire Companies that long time protection of pipe costs about 10 per cent of the cost of the line itself. This statement was based on figures taken from records on a number of

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ATTENDANCE AT THE SOUTHWEST DIVISION OF THE NATURAL GAS ASSOCIATION OF AMERICA MEETING AT DALLAS, APRIL 12 AND 13, 1927

Discussion of Pipe Line Flow Formulae

Paper read before Dallas meeting of the Southwest Division of the Natural Gas Association of America

By E. L. RAWLINS
Engineer, U. S. Bureau of Mines

THE purpose of the study of the flow of natural gas through high pressure transmission lines is to obtain information that will help the operating companies in designing their pipe lines and determining the capacity effect under different operating conditions in order to secure more efficient operation. The study is being carried on by means of a close cooperation between the Natural Gas Association of America and the Bureau of Mines.

The study of this problem was started several years ago by the Natural Gas Association when the Main Technical and Research Committee of the Association instructed the Transportation Committee, a Sub-Committee of the Main Committee, to gather in convenient form all of the existing data that related to Gas Pipe Line Flow Formulae and Gas Compressor Specifications. The members of the Transportation Committee then made a careful review of all of the existing pipe line flow formulae and also of all available information relative to compressor capacities. Each member of the committee submitted an individual report. The information contained in these reports indicated that at least eight different formulae had been developed and applied to the calculation of pipe line flow. In each of these formulae, the deciding factors that influenced the flow of gas through the lines were as follows:

(1) Quantity of gas flowing.
(2) Absolute inlet pressure.
(3) Absolute outlet pressure.
(4) Diameter of the pipe.
(5) Length of the line.
(6 Specific gravity of the gas.
(7) Factors for correction of pressure and temperature to standard conditions.
(8) Calibrated constant to correct for variation due to operating conditions.

Several sets of calculations were made with assumed values of these factors. The assumptions were made in such a way that widely different conditions of operation were represented. The flows as calculated from each of the formulae under each of the different operating conditions then were compared and a variation in the results were noticed.

In order to understand better the scope of the work contemplated by the committee and the methods of carrying it to completion, a brief summary is given below of the data and information relative to pipe line flow that was put into report form by the various members of the committee.

After studying these data, the members of the Transportation Committee decided that the part of the transportation problem relating to pipe line flow should not be limited to simply a codification of the existing data and formulae, but that actual field tests should be conducted on as many operating lines as necessary to represent all operating conditions that would effect the factors in any pipe line flow formula.

The Bureau of Mines is represented on the Transportation Committee and also is vitally interested in the pipe line flow formulae work. It was decided, therefore, that the Association and the Bureau should co-operate in working on the problem; the bureau to consider it one of their major problems which should be completed as soon as possible. The field work is being done by two Bureau of Mines engineers and one engineer of the Association. The Transportation Committee is kept in close touch with the progress of the work and future plans for carrying it forward; and offers helpful suggestions and makes constructive criticism as the work progresses.

Weymouth's Formula

Basically derived from Unwins formulae, which is

U equals the square root of gCTM over f 1, times P_1^2 minus P_2^2 over P_1^2

U=initial velocity, ft. per second
g=acceleration due to gravity
C=thermodynamic constant of the flowing gas $= \frac{PV}{T}$
T=absolute temperature of gas
M=hydraulic mean radius of pipe= diameter over 4
P_1=absolute initial pressure of the gas, =pounds over the diameter in feet
P_2=absolute final pressure of the gas, =pounds over the diameter in feet
f=coefficient of friction
l=length of line in feet.

Coefficient of Friction

Experiments on air flow in pipes of different diameters indicate that the coefficient of friction f is a variable, decreasing with increasing diameters of line.

The curve is represented approximately by the equation.

f equals eight one-thousandths over the cube root of d.

Experimentation on coefficient of friction shows that drop in pressure due to friction is

1. Almost proportional to the square of the velocity
2. Proportional to density
3. Proportional to amount of rubbing surface
4. Dependent on the roughness of the surface in contact.

Various experimenters from Darcey in 1857 until the present time have found wide variations under different conditions.

Mean Hydraulic Radius

The term "mean hydraulic radius" is often used to express the resultant effect of friction. Its significance is as follows:

The area of resistance which opposes flow is equal to the surface area exposed to the gas or is the length of the pipe times the perimeter. The working pressure to cause the flow is effective over the entire cross-section of pipe. If the diameter is increased, the frictional resistance increases with the perimeter, and the amount of flow increases with the area of the pipe. Therefore, the effect of friction over flow decreases in proportion with the ratio of cross-section to the area in contact. This ratio is simply

$$\frac{\text{area}}{\text{perimeter}}$$

When the length of pipe, in proportion with which the effect of friction increases, is divided by the length of its mean hydraulic radius, in proportion with which the effect of friction decreases, the result is an abstract number representing the resultant effect of friction. For circular pipe, the mean hydraulic radius is simply $\frac{d}{4}$

Formulae

The final form of Weymouth's formula is

Q equals 37 times the quantity P_1^2

minus P_2^2 times d to the five and one-third over L, all raised to the one-half power

where the gas standard conditions of measurement is 60 degrees F. and 14.65 pounds absolute pressure and a flowing temperature of 40 degrees F.

Pipe Line Composed of Several Lengths

If a pipe line is composed of several lengths of line, L, L, L, etc., L of diameters d, d, d, etc., d each length must be transformed into an equivalent length of one diameter. The formula is

L^1_n equals L_n times the quantity d^1_n over d_n, raised to the five and one-third power.

The equivalent lengths added together give $L=L_1^1+L_2^1+$etc.,

which is the value of L in the flow formula. Curves can be made to represent the equivalent lengths for different diameters of pipe and help to facilitate calculations.

Looped Systems

In looped systems, which involve complicated calculations, it is necessary first to transform the individual pipe lines making up the system into respective equivalents having a common length. The equation d^1_n equals d_n times the quantity L^1_n over L_n, raised to the three-sixteenths power

is used for this purpose. A summation then is made of these equivalent diameters to be substituted in the pipe line flow formula. The summation takes the form

E times the radical $d^5/_3$, equals the radical $d_o^5/_3$, equals $d_o^8/_3$, equals E $d^8/_3$, d_o equals the quantity $Ed^8/_3$ raised to the three-eighths.

If the entire line consists of other sections of similarly composed looped lines, the equivalent single diameters of each section can be determined and the section then reduced to an equivalent length of some conveniently chosen uniform diameter. These equivalent lengths added together will give a line of uniform diameter of single pipe equivalent to the actual looped system. Curves can be established and drawn to facilitate calculations.

Storage Capacity

The term "storage capacity" as applied to a pipe line means the excess gas, over and above the average rate of supply, that can be packed in the pipe line during the period when the demand is less than the supply. Since this supply rate is the average daily deilvery and since the volume of gas in the line is a function of the pressure, in order to determine the storage capacity, it is necessary to determine the total content of the line under the variable pressure conditions. The storage capacity is the difference between the packed condition and the unpacked condition of the line.

The unpacked condition of the line is obtained when the gas is flowing at the average daily rate. When the consumption is below this point excess gas is being stored. This point then represents the lower limit in the daily delivery rate.

The packed condition of the line is such that the intake pressure is at its maximum point as fixed by safety, pressure limits, etc., and the flow is a mean between the minimum and average rates for the day.

The various pipe line formulae that have been developed and used for calculating pipe line flows are as follows:

General Formula—

Q equals C times the radical P_1^2 minus P_2^2 times D^5, over L G.

which gives the relation between the quantity of gas Q and the various factors that have been considered to influence the flow of gas.

Cox Formula—

Q equals 3000 times the radical P_1^2 minus P_2^2 times D^5, over L G

G is equal to 65.

Rix Formula—

Q equals 2680 times the radical P_1^2 minus P_2^2 times D^5, over L G.

Towl Formula—

Q equals 50 times the radical P_1^2 minus P_2^2 times D^5, over L.

G equals .59

L equals length of line in miles.

When transferred to the general formula, the constants for these four formulae are:

Cox—2419
Rix—2680
Towl—2782
Pittsburg—2672

which is a total variation of over 10 per cent in the coefficient.

Oiliphants Formula—

Q equals 42 a times the radical P_1^2 minus P_2^2, over L

(a equals the radical D^5 plus D^3 over 30)

(G equals 0.6, L equals miles, T equals 60 degrees)

Unwins and Weymouths formulae have been given.

Spitzglass—

Q equals 64.3 times the quantity PAd^5 over SL times 1 plus 3.6 over d plus Q.03 d, all raised to the one-half power.

Q=Std. cu. ft. per hour
A=mean pressure
d=internal diameter
S=density
L=length in miles.

Comparison of Results from the Formulae

A few results from calculating pipe line flows with the pipe line flow formulae, assuming certain operating conditions have been selected at random and are shown below:

Conditions— Diameter Inches	Length Miles	P	P G	Discharge—M Cu. Ft. per 24 hours. Oiliphant	Weymouth	Cox	Rix	Towl	Pittsburg	Spitzglas
2	15	400	200.6	547	516	535	596	617	591	447
2	10	200	100.6	343	328	341	380	396	376	285
8	70	210	41.6	4992	5328	4428	4913	5112	4896	
8	20	214	40.6	9418		8808	9761	10130	8932	

Scope of the Study

As explained, the purpose of the study of gas flow through pipe lines is to obtain information for design of the lines and the capacity effects to be expected under different operating conditions. The results that are desired and which should be obtained by completing the study are as follows:

(1) Establishing a dependable formula, or formulae, for calculating the flow through pipe lines of different sizes under various operating conditions.

(2) Determining the effect of frictional resistance on pipe line flow; both skin friction due to the contact with the surface of the pipe and internal molecular friction, or viscosity, due to the friction between the gas molecules themselves.

(3) Determining, from practical studies during field operation, the relation between pressure-drop per unit length of line and quantity flowing, increase or decrease of velocity and other flow characteristics that will affect the quantity results.

(4) Results from conducting a pressure variation study throughout the length of representative lines that are tested, taking into special consideration the effect of each kind of fitting and expressing the results in equivalent lengths of line. At present, the plan is to use an orifice for a basis in the same manner that a right angle elbow is used in oil transportation flow.

(5) Determining a relation between the total resistance to gas flow and diameter of the pipe.

(6) Determining the maximum variation in flow due to the different conditions of the internal surface of the pipe, or in other words the maximum variation in flow due to a maximum change, typical to operating transmission lines, of the skin friction of each size pipe.

(7) Determining the effects, if any, of the chemical composition of each kind of gas transported, the water content, the gasoline content, and various other physical conditions of natural gas that are not typical of theoretical considerations.

(8) Determining the effect of the compressibility of gas, or deviation from Boyle's law, as it relates to the theoretical considerations and the pressure-drop per unit length of line in practical operation.

(9) Obtaining data from a few lines which can be used for measurements over rather a long period of time, at least a year, so as to

get seasonal changes, and certain pressure changes, and on which lines the metering equipment will be kept in good order.

(10) Determining the capacity of build-up effects in any pipe line on the measurement by considering "feed-in" to the line at different connections and also the actual volume and pressure changes in the line due to fluctuating demand conditions.

(11) Obtaining data from experimental work which is planned so that a sufficient number of pipe lines can be selected and a wide range of operating conditions included to make the result applicable to any operating conditions.

It will be necessary to investigate carefully the last ten of the above items before any conclusions can be offered that will change the existing pipe line flow formulae. At the present stage of the work it is not known that a new formula will be developed. Instead, actual data are to be taken from field tests on transmission lines under various operating conditions, and the results of quantity measurements as obtained in these tests will be compared with quantities as obtained by solving existing pipe line flow formulae.

Investigation of the Physical Properties of Natural Gas

One of the factors that has caused much discussion in pipe line flow formulae is the difference in various physical properties of different natural gases. These physical properties that affect the flow of gas are the actual chemical composition of the gas, the compressibility or deviation from Boyle's law, the gravity, and possibly the viscosity. Accordingly, as a preliminary study to the pipe line flow formulae problem, as many samples of different natural gases as possible have been collected and a determination of the physical properties of each gas has been attempted as follows:

(1) The chemical compositions have been obtained by accurate analyses in the chemical laboratory of the Helium Division of the U. S. Bureau of Mines at Fort Worth, Texas.

(2) The compressibilities at definite pressures have been obtained with a specially designed apparatus employing the principle of water displacement. The gas, under the desired pressure is expanded from a small container of known volume to atmospheric pressure. The expansion is made through a large container filled with water, the water being displaced and measured as the gas is expanded from a high pressure and comparatively small volume to atmospheric pressure and the resulting volume. A comparison of the theoretical expansion that should apply to a perfect gas and the expansion that actually is measured then is made after correcting the experimental results for vapor pressure, temperature, and other influencing factors. A series of curves representing the relation between pressure and the deviation factor have been made for several different samples of natural gas.

(3) The gravities of the gases have been obtained with the improved type Bureau of Mines gravity balance.

(4) The total frictional resistance factors, which simply compare the frictional resistance as offered to gas flow compared to the resistance offered to air flow, have been obtained by discharging gas and air respectively through 150 feet of 1/8-inch copper tubing, coiled and placed in a water bath to maintain constant temperature conditions, and comparing the rates of flow. No attempt yet has been made to separate the actual skin friction and the internal molecular frictional effects.

As the work progresses on field tests of natural gas transmission lines, it is palnned to obtain a representative sample of each gas that flows through the pipe line that is used for the experimental work, and determine each of these four main physical properties.

Proposed Field Laboratory Experiments

In any research problems where several variable factors influence the results that are obtained, it is desirable to have as many of the factors under control as possible. The ideal condition for experimentation is to control all of the factors with a single exception of one variable during the performance of an individual experiment. Field tests on operating pipe lines to obtain data for pipe line flow formulae calculations involve such variable factors as quantities, pressures, velocities, build-up conditions, temperatures, conditions of internal surfaces of different pipe lines, changes in the physical characteristics of the gas, and other factors that have a decided influence on the measurements and which without a good knowledge of their probable actions, could not be accounted for very accurately. As a result, it has been decided by the Transportation Committee that a series of field laboratory experiments, where the different factors could be controlled, are desirable in order to interpret properly the results of field tests on transmission lines.

The plans for the field laboratory tests are to construct different sizes of short pipe lines, at least 1000 feet long, in the Chickasha gas field and use them for special flow tests. Three types of construction will be used and the following sizes of lines will be built:

(1) For screwed line construction, the diameters will be two, three and six inches.

(2) For rubber coupled line construction, the diameters will be two, three, four, six and eight inches.

(3) For welded line construction, the diameters will be three and six inches.

Each set of lines for each kind of construction will be built as a manifolded unit, with a welded header arrangement at each end of the lines. An orifice flange will be installed on each of the lines about 20 feet from each of the headers and there will be at least 1000 feet of straight run pipe between the two orifice flanges. The measurements will conform with the results found by the experiments of the Natural Gas Association at Buffalo on straightening vanes.

The experiments on this field laboratory setting will give the following information:

(1) A comparison of the effect of different kinds of joints in the same size of lines.

(2) The relation between rate of flow and the diameter of the pipe.

(3) Accurate data on the frictional resistance due to changing the internal surface area exposed to the gas flow.

(4) Effect of changing the rate of flow and velocity in each size of pipe.

(5) Accurate data, on a small scale, relative to the factors that influence the flow of natural gas in a pipe line.

Proposed Field Tests on Operating Transmission Lines

The laboratory field tests really are only a preliminary to the main pipe line flow formulae problem; and the results of these tests are intended as a basis for interpreting properly the results of field tests on operating lines.

The desire of the Transportation Committee is to obtain flow data from as many different sizes of line in as many parts of the country and operating conditions as possible. Accordingly, a questionnaire has been prepared and sent to different operating companies by the association. This questionnaire is simply a data sheet for reporting transmission lines which are available for study of flow of gas through pipe lines and pipe line capacity, also conditions of the pipe lines and characteristics of the gas.

The companies have shown an enthusiastic spirit of co-operation in the way they have answered these questionnaires. At present there has been received offers of 1015 miles of pipe line consisting of 8⅝-inch, 10-inch, 12-inch, 12¾-inch, 16-inch and 20-inch pipe located in New York, Kentucky, California, Texas, Ohio, and Arkansas. This does not include the offer of the

two largest operating companies in Oklahoma of any part of their system that is adaptable to the work.

Methods of Obtaining Data in Field Tests on Transmission Lines

In the field tests, the principal data are taken at the orifice meter where the measurement of the quantity of gas is obtained. These data consist of the static pressure in pounds per square inch. The differential pressure in inches of water, and the temperature of the flowing gas.

The static pressure is obtained with a deadweight gauge. This instrument is more accurate for experimental pressure measurements than either a test gauge or recording gauge; the pressure measurements being correct to within a pressure of one-tenth pound per square inch.

In order to obtain an accurate record of the differential pressure, it was necessary to construct water manometers that not only had to be of sufficient size to record any differential pressure typical to operation but had to withstand satisfactorily pressure as high as 400 pounds per square inch. Accordingly, double reading manometers constructed with high pressure glass tubing connected with specially designed stuffing boxes, were made in the Bureau of Mines instrument shop. The manometers have a range of 56 inches of water.

In order to obtain the temperature of the flowing gas for the correction of the measurement through the orifice to standard conditions, mercurial thermometers are inserted in steel thermometer wells which are put in the pipe line near the orifice meter. The bulb of the thermometer is not subjected to the gas pressure.

Also, in order to obtain data on the variation of static conditions throughout the length of pipe line that is being tested, recording gauges are installed at conveniently selected points along the line. These gauges are calibrated against the gauge tester and are kept in good condition during the period of any pipe line flow test.

At present, the flow tests are being conducted with the purpose of comparing actual field measurements with results as obtained from existing pipe line flow formulae. Consequently, on any pipe line, it is desirable to take readings for periods of time when the flow conditions are steady; that is, when there is no variation in either the static pressure or differential pressure and where the same amount of gas is flowing through each section of the line at the same time. These ideal conditions are difficult to realize in actual operation, and in order to approach them as nearly as possible, successive observations are taken over a long period of time and then certain portions of the test are selected as representative of the desired conditions.

In the first work that was done on this problem, the test was conducted for eight hours each day for six days. During four hours each day, the static and differential pressure readings were taken at intervals of three minutes; and for the remaining four hours at intervals of five or ten minues depending upon the steadiness of the flow. The temperature and atmospheric pressure also were recorded every few minutes. In this particular test, there were periods when the static pressure increased slowly at a rate of 0.2 to 0.3 pounds per square inch during each three minute interval while the differential pressure remained practically constant; also, there were other periods where the static pressure decreased slowly while the differential pressure increased, or where the static pressure increased while the differenttial pressure decreased. It is planned to record all of the results of this test on one chart by plotting separate co-ordinates of quantity, static pressure, and differential pressure against the time that these observations were taken and then to compare these results with the pressure conditions through the length of the line. These pressures were obtained with recording gauges placed at about one mile intervals along the line.

Conclusion

The lines that have been described by the various companies in their offers for experimental purposes vary from the simplest construction of a straight run of only one size of pipe between two orifice meters to the complex systems of several sizes of pipe with "feed-ins" outlet connections, and parallel lines. It is hoped that the field laboratory tests will give definite information relative to the variation of pipe diameter, line length, pressure conditions, and gas characteristics with the rate of flow; and that the field tests on the simple construction of a straight run of only one size of pipe between two meters will indicate the reasonable variation that should be expected from the more ideal consideration due to the difference in the internal surfaces of different pipe, the changing characteristics of the gas, and other operating factors. Finally, it is hoped that with the information from these two conditions, it will be possible to conduct tests on the more complex construction and be able to interpret the results properly so that information will be obtained not only relative to the pipe line flow formulae but to the "packing" effect of these lines.

The Bureau of Mines appreciates the friendly co-operative spirit of the association in this work and hopes that the results will benefit the industry.

Third Electric Company Enters West Texas

San Angelo, Texas.—An abundant supply of electricity for power in drilling and pumping wells in the West Texas fields is assured from the three separate power companies now building circuits into the district. The latest entrant into the district is the Pecos Valley Power & Light Company, subsidiary of the Kansas City Power & Light Company, which also controls a large generating plant in the heart of the Texas Panhandle field. The Texas Electric Service Company, subsidiary of the Texas Power & Light Company, and the West Texas Utilities Company, an Insull subsidiary, have been at work for several months in extending their transmission lines westward from Big Springs and San Angelo, respectively.

The Pecos Valley Power & Light Company purchased a 45-acre plant site bordering on the north bank of the Pecos River in southeastern Crane County from Tom Nolan for $40 per acre in fee, and has started moving in materials to build a plant that will develop about 13,000 KVA per 24 hours. This site is located in the south end of section 11, H. & T. C. survey, block 31, and a spur track will be built to the Orient railroad. The plant equipment will consist of three 6000 KVA Westinghouse steam turbines, and four 1000 H.P. Springfield boilers, although the third turbine will not be installed until after the first units are in operation.

The Big Lake field will be the first in the West Texas district to be electrified throughout, as contracts have been made by the Pecos Valley Power & Light Company to supply the Big Lake Oil Company and the Texon Oil & Land Company with electricity for pumping the 175 producers in the field, and also for drilling purposes. The change to electric power in this field is scheduled to take place about July 15, 1927, according to the terms of the contract. A double circuit of transmission line will be built from the plant via the McCamey-Hurdle district, centering on the Crane-Upton County line, thence to the Big Lake field, a distance of about forty miles.

Natural gas from the shallow producing horizon in the Big Lake field has declined to a level below current requirements, and drilling operations have been slowed down lately. The gas production in the main oil pay horizon is contaminated with sulphur, and is not desirable for fuel, or for domestic use in the field camps. The Big Lake Oil Company has purchased about 100 twin electric motors for the pumping of its wells, and will also drill with this power when the current is available. The small electric power plant operated by the Big Lake Oil Company in the field will remain in service to supply current for the company's field camp, and also for operating the motors used on the crude gathering system in the field.

Gulf Coast Drilling Operations Further Curtailed

Companies report 39 rigs shut down during 30 days, with most of curtailment in areas of proven production

By WALLACE DAVIS
Staff Representative

EXTENT of curtailment of field operations in the Gulf Coast territory growing out of the present market weakness is shown in a decrease of from 230 active rigs on March 20, to 191 April 16. This drop of 39 operations in less than a month has been effected chiefly in proven territory.

A continued cutting of operations in the near future is problematical, considering activity from a general standpoint, inasmuch as there are more locations now waiting for rigs than there was at this time last month. While most of the major companies are now following a policy of cutting operations in proven fields to almost 50 per cent of what they were at the time the recent price cutting started, such a program will not greatly affect the extent of drilling, as the majority of operations now are in non-productive dome territory where development is running steady. As an example there are 46 rigs running around undeveloped domes for the purpose of outlining the productive areas. There are 21 rigs running in rank wildcat territory, and approximately 30 rigs active on locations in semi-wildcat territory skirting proven fields.

The greatest decrease in drilling is seen in the Gulf Production Company with 42 operations April 16, as compared with 57 active rigs March 20. The Humble had 17 rigs running, as compared with 18 of the month previous, The Texas Company had 12, with the same number last month, while Yount-Lee Oil Company cut field operations from 16 to 14 rigs during the month. There was little change in the total number of operations by small companies and independents during the month, there being 47 operations under this class against 49 of the previous month.

As an example of the concentration of the major part of drilling activity in the Gulf Coast territory the six leading operators are drilling 104 wells, while the 55 remaining companies and independents are together drilling 87 wells. Another example of this is the fact that Gulf Production Company was on April 16 running 22 per cent of the rigs active in this territory.

Spindle Top continued to lead in coastal activity with 30 operations last week as compared with 32 of five weeks ago. There are 11 rigs running at Blue Ridge, an increase of one over last month, while Hull was decreased by one operation to 10 rigs April 16. Pierce Junction was the fourth field with nine wells drilling against 11 of the past month. There was a decrease of four wells drilling at Lockport with eight operations last month. This drop, however, was due to recent completions, and locations are made for the continued use of the rigs.

Lease obligations and protection against drainage is the leading factor which bids fair to keep activity in the Gulf Coast up to somewhat of a normal situation. It is revealed that there was little over-activity in the coast even prior to the crude price slump, and at that time approximately 50 per cent of the drilling was not especially for the sake of recovery as much as for fulfillment of lease obligations and offsetting of producing wells on competitive acreage.

Field Operations in Gulf Coast Territory on March 16 Including Drilling Wells and Rigs

	TEXAS																											LOUISIANA							
Company—	†Austin Co.	Barbers Hill	Batson	Big Creek	Blue Ridge	Boling	‡‡Brazoria Co.	†Fannett	Goose Creek	†Hawkinsville	High Island	Hull	Humble	Kingsville	†Long Point	Markham	Nash Dome	Orange	Orchard Dome	Pierce Jct.	Piedras Pintas	Saratoga	Sour Lake	So. Dayton	So. Liberty	Spindle Top	§Wildcats	Eagle Point	Edgerly	†Hackberry	Lockport	Starks Dome	Vinton	Wildcats	Totals
Gulf	..	..	..	5	6	1	1	1	1	3	..	3	1	..	4	..	..	2	2	2	..	..	..	3	..	3	..	1	1	..	..	2	..	..	42
Humble	3	1	..	..	..	..	..	..	3	..	..	..	..	5	..	..	..	..	..	..	2	..	..	1	..	..	3	..	..	..	..	..	..	..	..	18
The Texas Co.	..	..	1	1	..	2	..	..	..	..	..	2	2	..	..	..	..	..	..	..	..	..	1	..	1	1	..	..	..	..	..	..	..	..	1	12
Yount-Lee	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	10	..	..	..	3	..	..	..	..	14
Union Sulphur Co.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	2	5
Roxana	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5
Rycade	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	4
Rio Bravo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	2	..	..	..	..	..	..	..	..	4
Vacuum	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	..	..	..	9
Atlantic	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	2
Sun Company	..	..	..	..	..	1	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	9
Abercrombie Drilling Co.	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Marland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Pure Oil Co.	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Navarro	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Republic	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Magnolia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	2
Associated	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Humphreys Corp.	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Mills Bennett	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Kirby Pet. Co.	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Border Research Corp.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4
Miscellaneous *	2	..	3	..	2	2	..	..	2	..	..	3	1	..	..	1	..	4	..	3	..	1	..	..	..	6	8	1	3	..	..	..	1	4	47
‖Totals	5	4	5	6	11	8	8	1	6	3	2	10	6	5	4	2	1	7	2	9	2	1	2	4	1	30	11	2	4	6	8	2	1	12	191

‡Includes Stratton Ridge, Allen Dome and Clemens Dome. §Includes Brenham and Palagana. *Includes small companies and independent opeartors. †Points of no commercial production not listed under wildcats due to extensive centralized development.

Barnsdall Uses Gas Lift to Flow Seminole Wells

One of few gas compressor installations in field gets stripped gas supply from near-by natural gasoline plant

By GEORGE REID
Staff Representative

WITH ten wells producing oil on two leases in the Seminole field the average daily production reported by the Barnsdall Oil Company for the week ending March 11 was 15,132 barrels. The Barnsdall Company now has nine producing wells on its remarkable Mary Carter property, in the northeast corner of the southwest of the northwest of 24-9-6, two of which are Hunton sand wells, while the remaining seven are Wilcox sand producers. This is an 80-acre lease.

Six wells on the property are being flowed by the introduction of residue gas under pressure into the holes.

The tenth well of the Barnsdall Company is producing on its Lena Jones lease, well No. 1, section 34-9-6, and is one of the most remarkable wells of field. This well was brought in flowing at the rate of about 10,000 barrels and after a month of continuous natural flow its production was reported at 8902. At this time, when the well is almost two months of age, its production is holding up at around 6500 barrels. It has increased its production from time to time, supposedly because of the general application of air and gas pressure to wells in the adjacent vicinity, but to date no attempt has been made to flow it under artificial methods.

Not only has it lived longer as a flowing well than most producers in this territory, but its production has been of greater volume than those operations surrounding it. It will be interesting to watch the effect of the gas lift when this system is applied to the well.

On the Mary Carter lease, which has been producing from 8000 to as high as 14,000 barrels of oil from eight wells, prior to the recent completion of the ninth well in the Wilcox sand, depth 4181 feet, the Barnsdall Oil Company is flowing six wells under the gas lift method, from one centrally located compression plant.

Oil-Gas Ratio

The gas-oil ratio in this section of the Seminole field is similar to the conditions found in other sections. Approximately 500 feet of natural gas is produced with each barrel of oil. When this ratio starts diminishing the wells begin flowing by heads and after a short time cease flowing altogether.

The gas lift is applied often when the well reaches the stage of "heading," for at this stage there is usually less difficulty experienced in the application of the compressed gas, and the wells "break out" easier. This means, in other words, that if the well is put on the compressors while there is still sufficient gas present to cause it to flow intermittently, less pressure is required to get it started flowing continuously again under the gas lift system. This statement, like others applying to gas and air lift work, is not applicable arbitrarily, for often, it is said, just the reverse experience is met with, and wells "break out" easier when left to cease flowing entirely, before the application of artificial pressure. There is an interesting example of conditions met with in the application of the gas lift which is found in a recent resume of air-lift installations in the Seminole area. Two wells on the Barnsdall's Mary Carter lease had a total initial production of 4338 barrels. The last gauge before the application of the gas lift for these two wells was 349 barrels. After the air lift was installed the first production from these wells amounted to 4229 barrels, and some time later, on February 15, these wells were reported making 3271 barrels.

The usual practice for the field which consists of introducing the gas under pressure into the well through the 2½-inch tubing, and flowing the oil-gas mixture out through the annular space provided between the 6⅝-inch casing and tubing, is followed on the lease under discussion.

Gas Scarce

The Barnsdall plant is one of the few natural gas compression installations in the field. It may be said that general practice is to employ compressed air for flowing purposes, because of the scarcity of gas production in the field. The writer has visited a score or more of compression plants in the entire area and but very few gas compression plants have been noted, although many of the installations are designed and constructed for the purpose of compressing either air or gas.

This plant, however, secures its gas from the nearby natural gasoline plant of the Empire Company. This plant extracts the gasoline from the gas produced by this and other leases, securing a yield of around four gallons per 1000 cubic feet of gas treated. The residue gas is then discharged to the compression plant of the Barnsdall Company.

The compression plant consists of four Cooper machines, size 18 by 20 inch, which compress the gas to about 125 pounds pressure in the low stage, and increase this pressure to 400 to 450 pounds in the high stage. These compressors are being employed at present as a central air compressor station for the provision of air pressure for the tank builders working on the company's two leases. Barnsdall, by the way, is engaged in a building program calling for the installation of 17 80,000-barrel tanks on its two Seminole properties. The company has already storage capacity in the field for 1,350,000 barrels. The Cooper compression plant, however, is operated on residue gas for the gas lift work solely.

Gas Air Cooled

As the residue or dry gas is conducted through the compression system it is cooled between stages. This cooling is accomplished in aerial coils, which practice does away with the installation of water spray type of cooling towers and although such coils may not be quite as efficient, they are, however, giving satisfactory results in the service for which they were designed and constructed. There is one coil for each compressor unit. Each of the cooling coils has an over-all length of 40 feet. They are constructed of 1-inch pipes, 40 feet long, in two tiers, with 20 lines to the tier. The coil assembled is 10 feet in height, with a header on each end. All of the joints and connections are welded. In the four coils there is a total of 160 40-foot lengths of 1-inch pipe. No record has been made of the temperature drop given the gas in

(Continued on page 48)

APPLICATION OF AIR AND GAS LIFTS AT SEMINOLE

Modified Bends Reduce Friction In Flow Lines

Back pressure minimized by Seminole practice of fewer turns in pipe and elimination of right-angle bends

By WALLACE DAVIS
Staff Representatives

ONE of the problems under investigation at Seminole with regard to installations of the air-gas lift system as employed in this area, is the elimination of as many sources of back pressure on wells flowing artificially, as is possible. As the general practice in the Seminole fields consists of introducing gas or air into the tubing and forcing the mixture of oil, gas and air out of the well through the casing, the oil, etc., flowing through the annular space provided between the casing and tubing, it is seen that there are two relatively large surfaces over which the oil must pass, to develop frictional resistance. This friction must be overcome by the velocity of the rising oil. As the oil leaves the casing in general practice, it must make a 90 degree angle as it flows to the separator, where sometimes there are two more 90 degree angle ells, where the oil turns upward and again turns into the separator shell. These sharp angles are conducive to an increase in frictional resistance and back pressure. The elimination of these 90 degree turns is one of the problems being solved which lends to the refinement of gas lift practices.

Rock pressure in the Wilcox sand wells at Seminole is almost entirely absent and this lack of rock pressure has been the chief contributing factor to the relatively intense development and application of the gas-air lift system in this field. The force of the flow from many wells is derived from air and gas lift power, and with a load of 5000 to 6000 barrels of oil daily flowing through the lead lines, etc., the force of the flow is naturally weakened to the point where back pressure may endanger stopping it.

The elimination of all 90 degree angles in flow lines is one of the steps now being made toward the reduction of possible back pressure. The rush of early development work has forced the placing of such connection, but as development reaches a more settled stride, the flow lines from well to separator will be straightened out as much as possible. One of the latest developments along these lines is the erection of "Y" shaped Christmas trees placed just over the bradenhead connection, and the placing of the separator close enough to the well as to make possible an almost direct flow into the trap with but very little turn in the flow pipe.

The illustration shows one method of accomplishing the elimination of sharp or abrupt angles. The line is welded and flanged to the separator. The gentlemen in the photograph are S. F. Shaw, right, consulting air and gas lift engineer who installed Carter's artificial flow system, and C. L. Quick, left, engineer for the Carter Oil Company. This system of reduced angles in the flow is installed on Carter's Flora Carter 1, at Seminole.

Much of the present work of refinement at Seminole involves the installation of recording pressure gauges and volume control meters and other instruments of control and precision, on the wells which were completed hurriedly for flush production and allowed to flow without proper checking and recording of results until time could be found in which the operation could be put on a systematic basis for proper handling.

Corrosion

With some of the wells in the Seminole district another problem was encountered when the air lift system was installed on the wells showing water. It developed that a certain chemical reaction was assisted by the presence of air with the magnesium and calcium in solution in the water with the result that the casing and tubing were attacked by corrosion. This hazard was more or less overcome in a few instances by the change from air lift to gas lift to avoid the corrosion of the 6⅝-inch casing through which the wells were flowing, as well as the attack upon the outside of the tubing. In other instances it has been found profitable and practical to change the method of applying pressure, and to introduce the pressure into the casing to force the flow out of the tubing. In this second method corrosion was not prevented but a saving in time and money was brought about, in effect, the difference between the cost of 2½-inch tubing and 6⅝-inch casing, aside from the saving in time of pulling and replacing the two strings of pipe.

It is generally conceded that the performance of air and gas lift at Seminole has thrown a new light upon its use and will have much influence on its introduction into other pools heretofore not considered for such production methods.

The method used at Seminole has even been offered a new solution from certain type of fishing jobs. One example of this is recalled in connection with the Carter Oil Company's Lukes 2, which stuck a cable tool as it was penetrating the top of the pay sand. A second tool used in an attempt to jar the first one loose was also stuck. A stripping effected the recovery of the second tool but failed to fish out the first. Oil accumulated in the bottom of the hole and the well was placed on the pump to make about 300 barrels. Later, on the swab, it made around 600 barrels, but oil would not rise in the hole, due to lack of rock pressure, fast enough to make a profitable swabbing job. The well was put on air pressure, requiring about 590 pounds to "break out" and start the flow, using four Ingersol Rand 9½x4x10 electric power driven compressors, with the result that the well made 130 barrels an hour for the first 12 hours. On the third day the working pressure had been reduced to 450 pounds as a result of the riddance of sand, and the well had increased to 6200 barrels. During this time about 10 tons of sand had blown from the separator through the bleeder. Aside from the somewhat spectacular increase in production, the hole was cleaned of sand for the recovery of the lost tool at any time the operators are ready to fish it out.

SHOWING CURVED CONNECTIONS TO SEPARATOR. THE MEN ARE C. L. QUICK AND S. F. SHAW, ENGINEERS.

Cooke County, Texas, Has Seven Producing Pools

Lime formation across western part of county most prolific; shallow sand makes big per acre yield without big flush flow

By H. H. KING
Staff Representative

WICHITA FALLS, Texas.—Cooke County is rapidly forging ahead as an important source of crude production, with four separate oil and gas discoveries in the county registered since the first of the year, and a total of seven oil and gas pools. A big "lime high" extending across the western part of the county has contributed most of the discoveries to date, while a few "local highs" have also been proven for production. The shallow sand pay is lacking in big flush output, but the thickness of the horizon, with shale and lime breaks, affords a high yield per acre, and producers are predicting a greater oil recovery than found in the Archer County shallow areas.

The Hooser field in the northwestern part of Cooks County was the first shallow discovery, having been uncovered in April, 1926, but the first commercial production was not obtained until John Hooser and C. C. Lanier's A. Hyman 2 pumped 180 barrels initial at 1248-55½ feet. This field has been proven for production in a northwest to the southeast direction for considerable distance, and the limits have not been found on the northwest side.

The Muenster Townsite field, which was discovered last January by the Oil Operators Trust's Ben Luke 1, with an initial production of 100 barrels 39.5 degree oil at 1274-82½ feet, has since been proven for a lower pay that offers the largest producers ever completed in Cooke County. Stroube & Stroube's Koelzer 1-B swabbed 480 barrels 29 degree gravity oil on 24 hour test from the second pay at 1621-40 feet after passing up a 10 barrel pumper at 1310-14 feet. Camp-Hedrick & Oil Operators Trust's Kleiss 4 swabbed 400 barrels 30 degree gravity oil initial at 1619-45 feet. Oil Operators Trust's Kleiss 2 flowed 290 barrels natural 30.7 degree gravity oil at 1584-96 feet.

The Texas Company's Dennis 1, located north of the wildcat producers completed in March by Homer Chapman Oil Company and C. C. Lanier on the Montgomery farm, T. J. Hutchinson survey, swabbed 250 barrels high gravity oil during eight hour test from sand pay at 1315-16½ feet, and is rigging up Star machine to deepen. This pool is about one mile south of the Hooser field, and was uncovered early last month with a 200 barrel flowing well from sand pay at 1308-18 feet, after plugging back from water at 1326 feet. Kewanee Oil & Gas Company's Dennis 1, a northeast offset to the discovery well and east of the Texas Company's producer, is trying to re-set casing at 1309 feet, with a total depth of 1333 feet.

E. C. Stovall's Fee 5, which was reported last week making 250 barrels hourly from lime pay at 3892-3900 feet, making a new production record for the South Bend field, Young County, is holding above 5000 barrels daily. This well gauged 6600 barrels initial, and exceeded pipe line connections, but nearby storage was put to use, while additional tankage is being moved in by Stovall. The first well on this lease dropped from 800 to 200 barrels daily after the big well blew in.

West Texas Restrictions Are Removed by Line Completions

All fields now have outlet either through trunk lines or to car loading racks; production over 100,000 barrels

By H. H. KING
Staff Representative

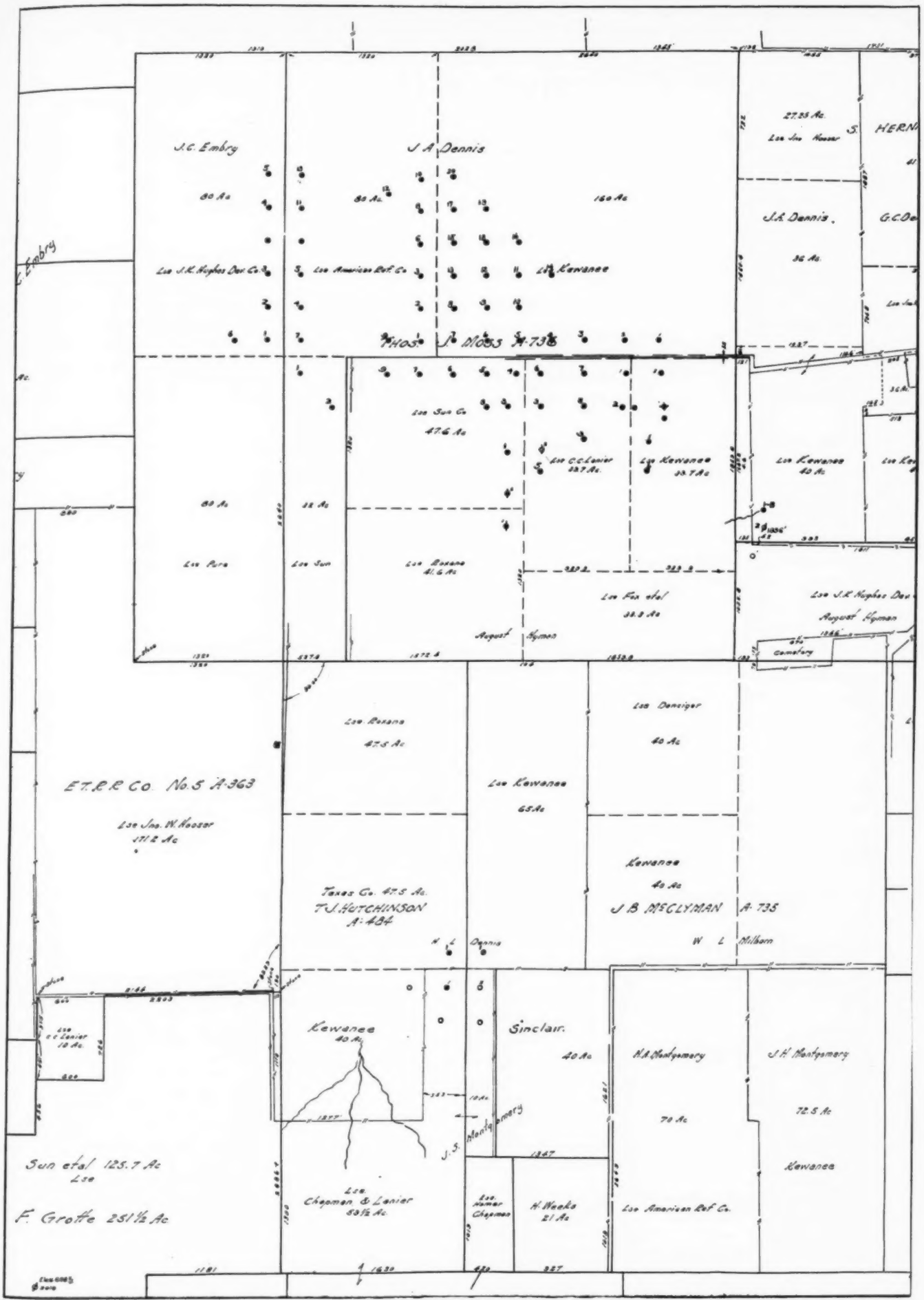
San Angelo, Texas—The completion of pipe line facilities for the Hendricks field, Winkler County, and the Yates shallow field, Pecos County, this week will lift the restrictions placed on crude production since these two fields became established as important oil areas. All other fields in the West Texas district are amply served by Humble's trunk line system, or by local lines terminating at tank car racks. Oil is being produced in 14 separate counties in West Texas, but only three fields are located within one mile of railroad facilities. The district averaged 100,672 barrels from 740 pumping and flowing wells during the past week, with restrictions placed on production in the Hendricks and Yates fields.

The Southern Pipe Line Company is completing its six and eight-inch line from the Hendricks field, Winkler County, to 72-car capacity rack, located on the T. & P. railroad at Wickett, while the Illinois Pipe Line Company is finishing its six-inch line extending from the Yates field to McCamey, where deliveries will be made to Humble. The former company is a branch of Standard of Indiana, while the latter is a subsidiary of the Ohio Oil Company. The line to the Yates field is about 26 miles in length, and is rated good for 10,000 barrels daily, while almost this much oil is available from the four completions owned jointly by Mid-Kansas and Transcontinental Oil Company.

The Southern Crude Oil Purchasing Company's Hendricks 1-C, which was reported last week as a completion offsetting the discovery well of the Winkler County field, has been pinched to 385 barrels daily, after registering a flush flow of 1110 barrels of 28.8 degree gravity at 64 degree temperature early last week from pay at 2908-48 feet. Gulf's east offset to this new producer was pinched to an average flow of 495 barrels daily last week, while the discovery well is flowing 360 barrels daily. Independent's Hendricks 1, a west offset to the discovery well, is drilling cement plug after setting 6 5/8 casing at 2815 feet, with an estimated flow of 5,000,000 feet of gas and light spray oil at 2797-2825 feet. Southern's Hendricks 3-C, logged the top of the salt early this week at 1870 feet.

Wildcat interest in West Texas centered on the Llano Oil Company's Scarborough 1, located at the center of section 1, block C-22, Public School Lands, Winkler County, and within two miles of the New Mexico line. This test has revealed a structural high comparing favorably with the Hendricks field, located 13 miles to the south, through having logged the salt at 1115 to 2640 feet, and the big lime at 2665 feet, with a surface elevation of 2921 feet. A slight odor of oil noticed in cuttings at 2675 feet caused the owners to set casing before drilling deeper.

(Continued on page 46)



MAP SHOWING THE HOOSER FIELD, WHICH WAS THE FIRST SHALLOW OIL STRIKE MADE IN COOKE COUNTY, TEXAS, AND THE NEW POOL OPENED LAST MARCH BY HOMER CHAPMAN AND C. C. LANIER ABOUT ONE MILE TO THE SOUTH. THE COUNTY HAS ADDED FOUR NEW OIL AND GAS POOLS TO THE NORTH TEXAS DISTRICT THIS YEAR.

Louisiana Interest Shifts to Sabine Parish

Touted field opener at Cartersville proves another Bossier parish fluke; Pleasant Hill has three new wells

Shreveport, La.—The presence of salt water in the Louisiana Oil Refining Corporation's Blanton well in the Cartersville section of Bossier Parish, indicates that history will repeat itself in the Plain Dealing sector of the State. When the well was tested during the latter part of last week it showed that the oil production was being rapidly drowned out by salt water, although the gas output of the well remained the same as when it was first completed.

The action of this well brings to mind the Scovill and Gains well, located in section 22-23-13, about eight miles southwest of the present scene of activity, which was drilled by Curtis Scovill and the Love brothers during 1917. According to the history of this well, the rig was shut down while the crew was away fishing on July 4, and while they were away the well came in flowing at the rate of around 1500 barrels of oil per day. During the time that the well flowed it looked like a million dollars, but it only flowed ten days and went dead, thereafter yielding nothing but salt water. Since that time at least 20 wells have been drilled in this community in search of the mysterious sand which gave up the oil in this well. All of them, however, have been complete failures until the Louisiana's well, Blanton 1, located in section 23-23-12, almost eight miles northeast, was completed on April 6, flowing at the estimated rate of 2000 barrels of light oil per day, and approximately 35 million cubic feet of gas, from a depth of 3091 feet.

The Louisiana's well was only allowed to flow open for a short period last week, at which time it was closed in, pending the installation of larger connections, the officials of the company being under the impression that large size openings for the flow lines leading from the well will give it a better opportunity to throw up the fluid production which the extremely heavy gas pressure keeps pushed down in the bottom of the hole when allowed to flow through small size connections. Whether the fluid which will come from the well will be oil or salt water, remains to be seen. The well will be subjected to another test early this week; and all operators throughout this territory are watching it with keen interest.

Pleasant Hill

The Pleasant Hill section of Sabine Parish is getting a big play since the Arkansas Fuel Oil Company drilled in Logan 3, 4 and 5 last week. Logan 3 was brought in on April 13, flowing 600 barrels, from 3192 feet; Logan 4 was completed on April 16, 110 barrels, from 3265 feet, and Logan 5 was swabbing 200 barrels from 3224 feet. The oil from these wells is of around 41 degree gravity, and is a light green color. All of the wells drilled by the Arkansas Fuel Oil Company in this section have been found to be rather "freakish" in that they show a great gas pressure directly on top of the sand, in many cases threatening to blow out, and when they are bailed in, they have barely enough gas to flow them. In fact, Logan 5 showed all signs of blowing out while being drilled in, and now there is not sufficient gas to flow the well. All of the Arkansas wells, except Logan 5, are located in section 33-10-12, the same section in which the discovery well, Logan 1, now flowing at the rate of 150 barrels per day, almost 60 days after completed, is located in. Logan 5 is in 28-10-12, the adjoining section on the west.

Indications are that the Pleasant Hill field will bear to the west, at least this is the consensus of opinion following the completion of the Ohio Oil Company's Cook 1, in 34-10-12, adjoining the discovery lease on the east. Activity in the western portion of the field is already assuming large proportions. Several new locations have been staked out since the completion of the Arkansas' three wells. Beckman and Freeman's Logan 1, section 28-10-12, is blowing out at a depth slightly below 3100 feet, after being drilled down to the top of the sand during the past few days. This blow out is looked upon as a good sign by the operators, since the absence of gas has been one of the bad features of the newly found field.

The future of the Pleasant Hill area now seems assured, after having gotten away to a bad start due, partly, to the fact that most of the operators thought that the first well drilled by the Arkansas Fuel Oil Company was an isolated, or "stray" well; and also to the fact that the development of the Plain Dealing-Carterville section, of Bossier Parish, and the Richland Gas field, of Richland Parish, have both been far more spectacular than the Pleasant Hill field, which was shut down for almost two weeks, during which time the Arkansas was curing titles to its leases.

In the Richland Parish gas field three wells are drilling near the sand and should be finished during next week. The Gulf Refining Company, discoverers of the gas bearing sand in this section, is drilling at a depth of 2615 feet in Wayne 1, section 36-17-5e. The Stovall Drilling Company's Mitchell 1, section 20-17-6e, has attained a depth of 2291 feet while the Tex-La Carbon Company's Broughton 1, in section 1-15-6e, is drilling at a depth of 2380 feet. All three of these wells should be drilled in at about the same time. The largest land deal reported in this vicinity was perfected last week when the Rhymes interests, fee owners of the land upon which the Gulf's discovery well is located, sold their holdings, in fee, to Natural Gas Production Company for a consideration said to be in the neighborhood of $270,000.

The Payne well of the Clark and Melat-Avalon Oil Company interests continues to create excitement for its owners, as well as others interested in the Logansport section of De Soto Parish. This well, completed several years ago, blew out when recently deepened with cable tools, and flowed for several weeks at the rate of several hundred barrels of oil per day, then sanded up. Efforts to survive the well had met with apparent failure until it again blew the tools out of the hole with such force as to be heard for a number of miles. After blowing rocks and other debris continuously for several hours, the well apparently sanded up again and has not showed any signs of life since. The crew is preparing to make another attempt to clean the well out.

New Mexico Wildcat Has Oil in Hole

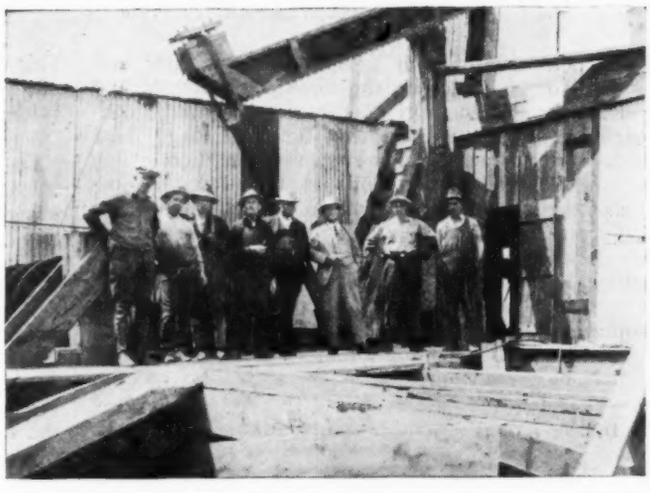
Artesia, N. M.—Over 1500 feet of oil is standing in the hole of the Mid-Continent Oil Company's Woolley 1, Jones on the McIntyre permit in section 21-17-30. This well is down 3460 feet and completion has been delayed for the past two weeks, as the crew are engaged in pulling a dropped string of 10¼-inch casing. All but 14 joints of this have been recovered, the tools going through freely. This test is located midway between the Artesia and Maljamar fields.

Considerable gas has been encountered in the Henderson, Dexter, Blair, Inc.'s Wyatt 1 in section 34-17-33, at a depth of 4762 feet.

In the Artesia field, Clark & Grimm have struck a flow of gas estimated at one million feet, in Daugherty 1, in section 3-17-27, this coming from around 1000 feet. Considerable trouble is being experienced due to a string of frozen pipe.

Governor R. C. Dillon has appointed C. G. Staley of Socorro, New Mexico, as State geologist to succeed Prof. E. H. Wells, who recently resigned.

Upper left shows the general topography of country where the Taranaki Oil Fields Ltd., is drilling its Waiapu No. 2 on the North Island of New Zealand.



Upper right shows close-up of rig and equipment used on Waiapu No. 2.

In Center, crew of the Taranaki Oil Fields Ltd., drilling Waiapu No. 2. Left to right—L. C. Blackwell, driller; Clark, Callahan, McBride, tool dressers; A. B. Wheat, tool foreman; Chas. H. Taylor, ass't mgr.; H. C. Richard, driller and Grover Hammon, driller.

Picture taken February 15, 1927. *A. B. Wheat was killed in an automobile accident February 25th.*

Wildcatting on the North Island Of New Zealand

PROSPECTING for oil on the east coast of the North Island of New Zealand has been carried on for some time but development work in this section now being pushed by the Taranaki Oil Fields, Ltd., has been termed the first really serious attempt to make a thorough test of the country.

The accompanying pictures show the Waiapu No. 2 of the Taranaki, which is located nine miles from the small town of Tokomaru Bay and about five miles inland from the ocean. Work on this test is now going ahead at a satisfactory rate and the company is equipped to take its test to a depth of greater than a mile if necessary.

Interest in the district has increased following arrival of geologists of the Anglo Persian Oil Company, who are to make a complete inspection of that company's holdings on the North Island.

According to H. C. Richard, driller for the Taranaki Oil Fields, Ltd., at Tokomaru Bay, this company now plans to start operations near New Plymouth in the near future. The following letter together with the photographs has just been received from Mr. Richard:

"Being a well digger (driller) by trade, a traveler by inclination and a reader of *The Oil Weekly* by choice, and knowing that the men who read your publication like to hear what is going on in foreign fields, I am writing you a little description of the attempt to discover oil that is being made by the Taranaki Oil Fields, Ltd., on the east coast of the North Island of New Zealand. I am enclosing some snapshots of the camp, rig and the crew.

"The well, Waiapu No. 2, is located nine miles from the small town of Tokomaru Bay and is five miles inland, air line from the ocean. The country is hilly, as can be seen from the pictures; geologically, the country is very broken and the well is being drilled on a fault and with fair indication of success. The rig used is an ordinary eighty-two (82) foot cable tool rig and Oil Well Supply equipment is used throughout.

"The company's determination to succeed is evidenced in the selection of men and materials. Charles N. Taylor, the assistant manager, has a varied experience in the Far East—Asia, Europe and the United States; Mr. Wheat, tool fore-

man, also has had varied experience in foreign fields as well as the fields of the United States, and last but not least, the drillers—Blackwell, Hummon and Richard—have all seen service throughout the fields of the States as well as service in other foreign fields prior to coming to New Zealand. Colonial tool dressers are used with the exception of Frank McBride, who came out as the company rig builder and who is employed as a tool dresser when not otherwise employed and he also has seen foreign service before.

"The east coast of the North Island has been prospected for oil for many years in a rather desultory way and this is the first really serious attempt to thoroughly test the country for oil and that there is sufficient evidence to justify the attempt lies in the fact that the Anglo Persian has become interested and has part of its geological staff here in the North Island looking over the holdings of the company with a consolidation in prospect, and if this should come to pass a much larger program of wildcatting may be looked forward to.

"Seepages of oil and gas occur in many places on both sides of the island and also on the South Island. Several small producers have been drilled close to New Plymouth on the west coast of the North Island and a very high gravity paraffine base oil was obtained.

"Progress on the well has been somewhat slow in the big hole, but with the surface water and caves shut off the work is now going ahead satisfactorily and will soon become interesting, as showings are looked for reasonably shallow.

"The company intends to thoroughly test this location and has all necessary equipment for a deep test and this well may soon be added to those in the mile-deep class."

California Situation Far From Favorable

By WM. V. GROSS
Staff Representative

LOS ANGELES.—Flush production from two completions and two work-over wells in the Seal Beach district gave that area a 4,750-barrel increase in the daily average production, bringing it up to 34,850 barrels for the week ending April 16. The nature of the completions is having a tendency to accentuate the possible menace Seal Beach holds for the year's market condition locally.

Retail gasoline business and casinghead business in California are in serious conditions, and the outlook seems to hold no sunshine in prospect between now and fall, despite the advent of summer and its concurrent upward trend in the consumption curve. The fact that Seal Beach's gas is running from four to five gallons per thousand cubic feet and possibly will amount to at least twenty-five million cubic feet per day before the end of July is not an encouraging fact to anticipate. Aside from this phase of the situation, crude oil production in the area, in itself, is enough to warrant, seemingly, no hope for an upward revision of the crude price structure within six months. This condition should hold, regardless of what disposition is made of the area's flush.

Company	Drilling	Rigs	Locations	Producers	Operations	Prod.
Ahlberg	..	1	..	..	1	....
Fred Aitkin	..	1	..	..	1	....
Alamitos Oil Co.	..	1	..	..	1	....
Associated Oil Co.	6	1	5	5	17	3,350
Tom Bailes	..	1	..	..	1	....
Bankline Oil Co.	..	1	..	..	1	....
H. T. Barneson	1	..	..	..	1	....
Boatright	..	1	..	..	1	....
Calif-American Oil Co.	1	..	1	..	2	....
Calif-Eastern	6	6	..	..	12	....
California Petroleum Corp.	11	..	..	..	11	....
Coastal Oil Co.	1	..	..	..	1	....
Craburn Oil Co.	..	1	..	..	1	....
Dill Comstock	1	..	..	..	1	....
Dominguez Extension Oil Co.	1	..	..	..	1	....
Dutton	..	..	1	..	1	....
Fred Erwing	1	1	1	..	3	....
Henry Fisher	..	1	..	..	1	....
Fleet Pet. Corp.	1	..	..	..	1	....
General Pet. Corp.	9	1	2	..	12	....
Geo. Getty	8	2	1	..	11	....
Paul Getty	5	..	1	1	7	3,300
Hart & Co.	1	..	..	..	1	....
Hauser Pet. Corp.	..	..	1	..	1	....
Hughes & Richmond	1	..	..	..	1	....
Italo-American Pet. Corp.	1	..	..	..	1	....
Al Johnson	..	1	..	..	1	....
Marland Oil Co.	19	9	1	10	39	13,000
W. E. McCaslin	1	..	..	..	1	....
McCoy-Deeds & Cathers	1	..	..	..	1	....
Miley Oil Co.	2	..	..	..	2	....
M. W. Pannill	1	..	..	..	1	....
Petroleum-Securities Co.	21	5	3	2	31	7,000
Rainbow Pet. Co.	1	..	..	..	1	....
Richfield Oil Co.,	2	..	..	..	2	....
Fred Roberts	1	..	..	..	1	....
J. T. Robertson	1	..	..	..	1	....
South Basin Oil Co.	1	..	..	..	1	....
Superior Oil Co.	5	..	1	..	6	....
Standard Oil Co.	3	..	..	9	12	8,200
Travis Drlg. Co.	1	..	..	..	1	....
Union Pet. & Dr. Co.	..	1	..	..	1	....
Universal Consolidated Oil Co.	4	..	..	..	4	....
Fred Walker	2	1	1	..	4	....
Waklin & Peacock	1	..	..	..	1	....
Wallace & Failing	..	1	..	..	1	....
J. G. Wheeler	1	..	..	..	1	....
White Eagle Pet. Co.	2	1	1	..	4	....
Totals Week Ending April 16	125	38	20	27	210	34,850
Week Previous	115	39	20	25	199	30,100

Four Wells Completed

During the week ending April 16, four wells were put in production there to bring the production up to the present mark. Of these, two contributed flush, while two were work-overs. The Associated Oil Company's Bryant 2, a work-over was brought in for 1,825 barrels of 24 gravity oil from 4489 feet. Bryant 2 landed 6¼-inch casing at 4485 feet and is cutting only 0.6 per cent. The same company's Bryant 3 made 1,050 barrels of the same class of oil from 4487 feet, but is cutting six per cent.

Marland Oil Company of California, which produces daily 13,000 barrels of oil at Seal Beach, put its Bixby 15 on production for an initial estimated at 1,450 barrels of 22.9 gravity oil, cutting 0.6 per cent. Bixby 15 was drilled to 4427 feet and set 8¼-inch casing at 4417 feet. Marland also worked over its Bixby 10 at 4490 feet and got a 1,900 barrel yield. Bixby 10 is producing 24.3 gravity oil and cutting less than one per cent.

Another completion was made during the week, but had to be killed on account of water coming in around the shoe. This was the Petroleum Securities Company's Naples 5. The well had an initial estimated at 2,100 barrels, but its production at this rate lasted less than 24 hours.

Two Productive Sands

So far as is known, Seal Beach has two productive sands, each of which has proven to be capable of commercial production. These are referred to as the Selover and Bixby sands, respectively, the former being the deeper and more prolific. Out of the field's total daily production, more than 21,000 barrels is coming from the Selover sand, which seemingly produces not only at a greater rate but higher gravity oil also. Hence, a number of wells put on production first in the shallow Bixby sand have been deepened to the Selover horizon. Bix-

by sands yield 21 and 22 gravity oil, whereas the Selover sands yield from 23 to 27 gravity. Both are invested with considerable gas pressure, though the heavier is found in wells producing from the Selover sand. The existance of two sands capable of such rich yields is one of the things that has made the locality so attractive to both large and small operators.

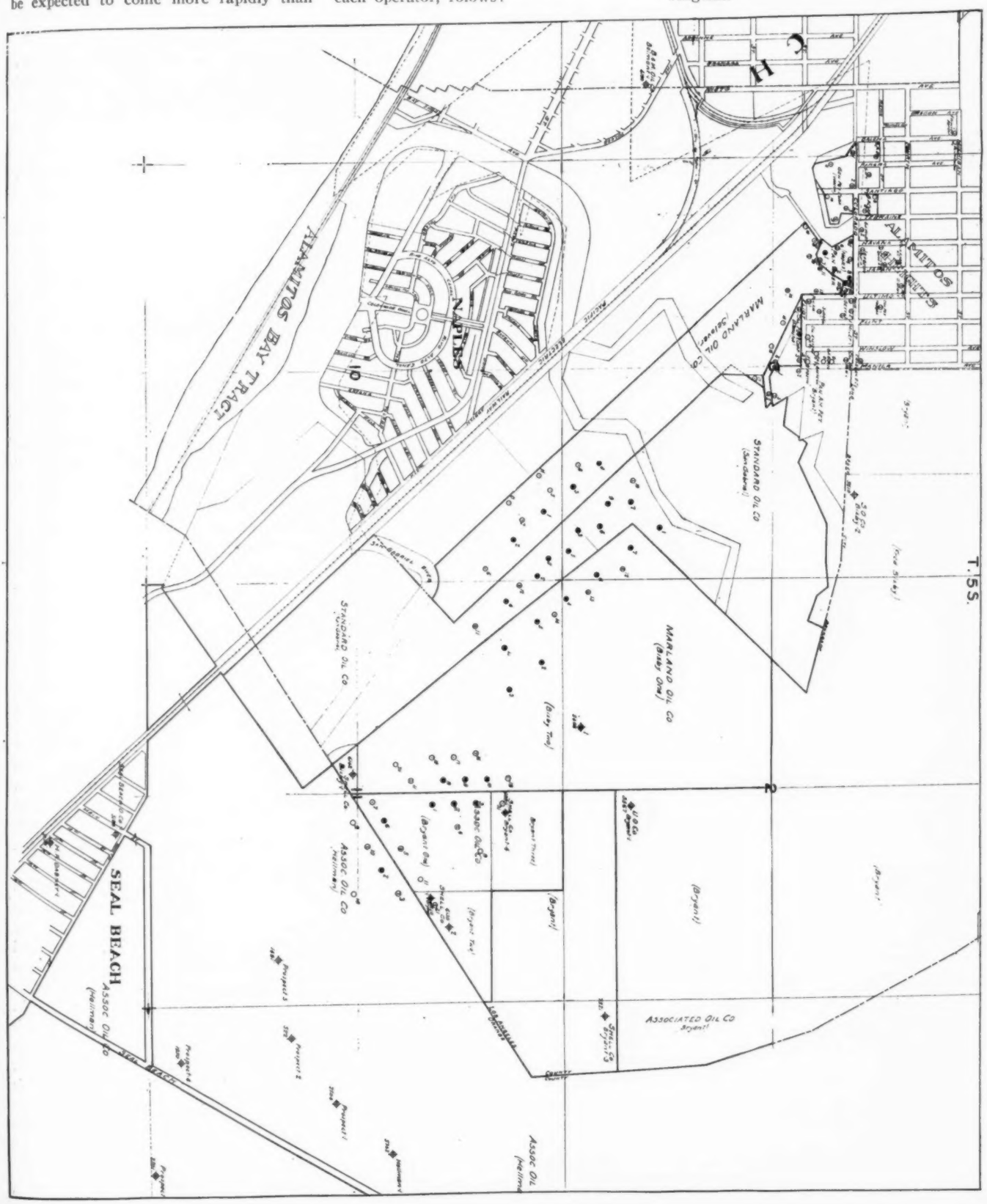
Development Prospect

From May 1 until the peak is reached, completions at Seal Beach each week may be expected to come more rapidly than they have to this date. Out of the field's 125 drilling wells, 38 have passed the 4000-foot mark. Of these 38, 11 are standing with the last string of casing cemented. Provided average good luck is had, at least four of them ought to be completed before April 23. With 5,500 barrels flush anticipated from the four, Seal Beach's daily production ought to continue its upward trend next week.

A resume of field operations at Seal Beach, giving the number of drilling wells, rigs, locations and producers of each operator, folows:

Alamitos Heights Store Open 24 Hours

Long Beach, Cal.—Petroleum Equipment Company has announced this week opening of a new 24-hour service in its Alamitos Heights store. This branch of the Petroleum Equipment Company is located at 5475 E. 7th Street, Long Beach, Cal., while the main office of the company is at 1618 Santa Fe Avenue, Los Angeles.



Completions Boost Production In Panhandle

Gulf-Magnolia line starts movement of 24,000 barrels daily; much new drilling to be started on Cockrell ranch

By H. H. KING
Staff Representative

AMARILLO, Texas.—Partially explored areas in Hutchinson and Carson Counties contributed unusually large flowing wells during the past week, including the Cockrell-McIlroy Oil Company's E. Cockrell 1, located on the southeast side of the Hutchinson County fiield, making 200 barrels pipe line oil per hour from sandy-lime pay at 2851 feet. The Prairie-Parks area in Northeastern Carson County added a half dozen new producers, which will result in a substantial increase in daily output of the county.

The first direct pipe line outlet for crude produced in the Panhandle was placed in operation April 15, and early this week was pumping crude from the district at the rate of 24,000 barrels daily. This line was built by Gulf and Magnolia through a joint operating plan from Panhandle, Carson County, to Eastland County, where connections are made with the two companies' trunk line systems leading to the Coast. This line is made up of 235 miles of 10-inch welded and threaded pipe, and was placed in operation in less than four months after the first joints of pipe were laid. About 120,555 barrels of oil was required to fill the line, and nearly one week was required for the first oil to reach the south end of the system.

Considerable new drilling will follow the completion of the Cockrell-McIroy Oil Company's 200 barrel hourly well on the Cockrell ranch, as the area was not rated good for flush production until the McIlroy Oil Company's Cockrell 1 made an initial flow of 1080 barrels February 19 after shot of 210 quarts at 2976-3050 feet, with a surface elevation of 3075 feet. The new producer is located in the southeast corner of a 35-acre lease in section 1, block B-3, D. & S. E. survey, and passed up 25 million cubic feet of gas at 2705 feet, with a surface elevation of 3062 feet.

Skelly Oil Company's 12,500 acre lease on the Schafer Ranch in northeastern Carson County scored its first producer making 70 barrels per hour initial flow from pay at 3130-40 and 3155-61 feet, with a surface elevation of 3215 feet. This well is located in the southwest corner of the north half of section 198, block 3, and widened the field a short distance to the northeast. Skelly paid $240,000 cash for a five year lease on this particular 320-acre tract shortly. before the first big well in the pool was completed, while the remainder of the Schafer Ranch was leased some years ago by Skelly at a nominal price. Prairie's J. W. McConnell 2-B, a direct west offset to Skelly's big producer, gauged 1320 barrels during the first 24 hours from arkose and lime pay at 3115-35 feet, having been completed in 60 days after spudding. Prairie's McConnell 1-B, located west of the above producer, was flowing 140 barrels daily while cleaning out to test pay at 3110-60 feet. Gulf's J. L. Noel 3, located in the southwest corner of the southwest of section 198, gauged 1000 barrels oil during first 16 hours from regular pay at 3118-28 feet, while two other tests on this lease are due to be completed this week, including a south offset to the Schafer well. Gulf drilled these tests with rotary to about 2500 feet, then standardized.

The Texas Company's J. L. Noel 1, located in the southwest corner of the northwest of section 187, block 3, widened the Prairie-Parks area a half mile with an initial flow of 225 barrels natural daily at 3230-52 feet. McMan Oil & Gas Company's J. L. Noel 1, located in the southwest corner of the southeast of the southeast of section 198, swabbed and flowed 485 barrels initial at 3138-3213 feet, with a surface elevation of 3254 feet.

PANHANDLE OPERATIONS

Amarillo, Texas—Condensed summary of field operations in the Texas Panhandle district at the close of the week ending April 16th, is listed below by counties, with comparative totals for the previous week:

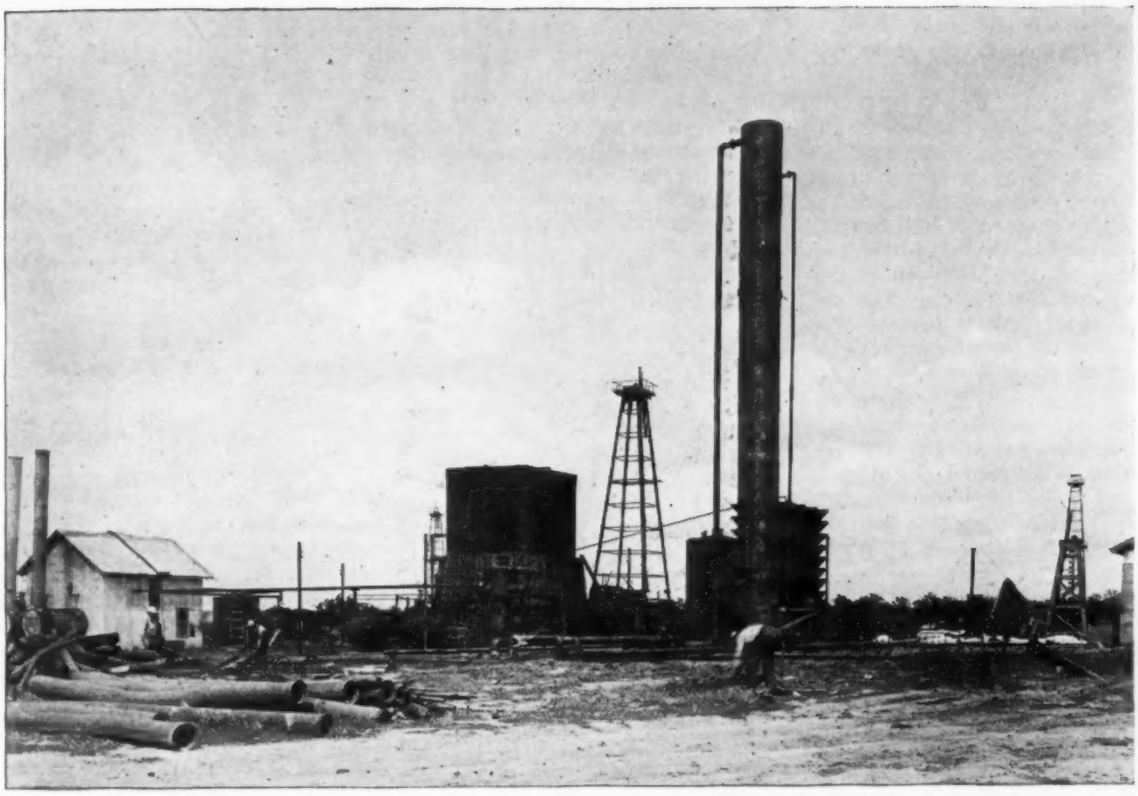
	Completions	Active Test	Shut Down	Rigs and Derricks	Locations	Totals
Armstrong Co.	1	..	..	..	..	1
Briscoe Co.	..	..	1	..	..	1
Carson Co.	4	57	5	6	1	73
Castro Co.	..	1	1	1	..	3
Childress Co.	..	1	1	..	..	2
Cochran Co.	..	..	1	..	..	1
Collingsworth Co.	1	1	..	..	1	3
Dallam Co.	..	2	1	..	..	3
Deaf Smith Co.	..	..	2	..	..	2
Donley Co.	..	1	..	..	..	1
Gray Co.	2	33	8	6	1	50
Hansford Co.	2	..	..	..	..	2
Hartley Co.	..	3	3	..	..	6
Hemphill Co.	..	..	2	..	..	2
Hutchinson Co.	19	133	30	32	4	218
Lipscomb Co.	1	1	1	..	..	3
Lubbock Co.	..	..	1	..	..	1
Moore Co.	..	6	3	1	1	11
Motley Co.	..	..	1	1	..	2
Ochiltree Co.	..	..	4	1	..	5
Oldham Co.	..	1	..	..	..	1
Parmer Co.	..	1	..	..	..	1
Potter Co.	3	..	..	..	..	3
Randall Co.	1	..	..	..	..	1
Roberts Co.	4	1	3	..	..	8
Sherman Co.	..	1	..	..	3	4
Wheeler Co.	2	23	6	2	2	35
Totals	40	266	74	50	13	443
Totals prev. week	29	279	89	48	13	458

Work Far Advanced on Panhandle Gas Line

Dallas, Texas.—Lone Star Gas Company's 18-inch gas line building from Petrolia to the Shamrock field in the Wheeler County section of the Texas Panhandle district, is more than two-thirds completed, and is scheduled to be ready to deliver Panhandle gas to North and Central Texas cities in several months. This gas line will terminate in the heart of the gas area on section 126, H. & G. N. Railway survey, block 23, Wheeler County, and will require approximately 185 miles of 18-inch welded and coupled pipe, representing a total investment of about $5,000,000.

Although the Lone Star Gas Company is amply supplied with gas from fields in Southern Oklahoma and Central West Texas to protect its domestic and industrial customers, the extension to the Texas Panhandle gas area was deemed advisable to create an almost unlimited reserve supply of fuel. Construction crews have worked northwest from the Petrolia station, Clay County, via Wichita Falls, Electra, Vernon and Quanah, thence across the southwest corner of Oklahoma via Hollis to the Shamrock field. The work is now progressing near Hollis, where a high pressure absorption gasoline plant will be erected to extract the natural gasoline from the gas passing through the line.

After taking care of gas connections at all points along the line west of Petrolia, the Panhandle line will deliver surplus gas to Fort Worth, Dallas and other North Central Texas cities via a 16-inch line that comes out of Oklahoma via the Petrolia station to Fort Worth. Lone Star is welding the Panhandle line in three and five joint sections, and connecting same with Dresser couplings. Weather and slow delivery on materials has slowed down the construction work during the past three months, while the final delivery on the pipe will not be made until late next month.



THE WELL BEHIND THE GASOLINE PLANT IS THE DISCOVERY WELL OF THE SEMINOLE FIELD—DRILLED BY I. T. I. O. COMPANY, MARCH 12, 1926.

Northwest of Earlsboro Shows Possibilities

Crosbie well makes flow of 500 barrels an hour; Seminole City proper has started decline

By ROYE MUNSELL
Staff Representative

TULSA.—A new area of possible large flush production has been opened northwest of the Earlsboro district, Seminole field, by J. E. Crosbie and associates with their Bryant 1, in the southwest of the northwest of 9-9-5.

The test has the top of the Wilcox sand at 4296 feet, wihch is considerably higher than the nearest producer, the Mid-Continent Petroleum Corporation, McKinley 1, in the southeast of the northeast of the southwest of 9-9-5.

The Crosbie well started off at 80 barrels an hour but increased its flow as the hole was deepened. After being deepened several feet, the well blew in and jumped to 500 barrels an hour. The present total depth is 4299, or three feet in the big pay. The well is now making around 150 barrels of oil an hour, pinched in.

The test of the Amerada Petroleum Corporation and J. A. Hull on the Cowden in the southeast of the southwest of 4-9-5, three-fourths of a mile northeast of the Crosby, is reported shut down in the Viola lime which was picked up at 4209 feet.

This well appears to be higher on the structure than the Gypsy-Amerada-Westland Wilcox sand discovery well in 16-9-5, and so points also to possible good production north of Earlsboro.

This area was previously thought to be of little value as a source of Wilcox sand production. As it is now, an additional 320 acres is pretty well proven, making the field extend two miles from the south to the north.

No Rush

Apparently, however, development will not be pushed until the crude market improves. The Amerada Petroleum Corporation and J. A. Hull test, in the southeast of the southwest of 4-9-5, which is shut down in the Viola, will probably not be drilled on into the Wilcox just now. It is reported that an agreement has been reached to hold back offsets.

The well of the Prairie Oil & Gas Company, which is southeast of this development, in the southwest corner of the northeast of 24-9-5, has been opened up and deepened. Immediately after being deepened 2 feet, the well made a flow of 75 barrels an hour. Water broke in, however, and cut oil production to 130 barrels during a 12-hour gauge which ended at six o'clock Sunday night.

When this well, which is about midway between the Seminole City field proper and Earlsboro, picked up the Wilcox sand several weeks ago with a nice natural initial flow, it was believed that some sizable new Wilcox sand had been discovered. With the well going into water on being deepened, as it has, these opinions need to be revised, of course.

The Prairie well has been shut down by agreement with other operators owning offset acreage. No offsets were to be drilled as long as the Prairie held back its well. During the latter part of the week it developed, however, that the Gypsy Oil Company would be forced to go ahead and drill its offsets or lose its lease.

When this emeregency arose, the agree-

ment was dissolved and the Prairie opened up its well and went ahead to make a producer from the top of the Wilcox pay.

Seminole City

In the Seminole City pool proper, T. B. Slick has a south extension with his Cudjo 2 in the southwest corner of the southeast of the southwest of 35-9-6. The Wilcox sand was topped at 4086 feet and drilled in to a total depth of 4150 feet. After a 55-quart shot, the well is estimated good for 2500 barrels. The well flowed and swabbed 1000 barrels overnight with about 40 feet of cavings in the hole as a result of the shot.

The T. B. Slick, Born 1, in the northwest corner of the southwest of the southeast of 35-9-6, has filled up 1000 feet with oil from Wilcox sand picked up at 4235 feet and drilled to the total depth of 4260 feet. The test is now shut down because of boiler trouble.

The Seminole City pool proper reached its peak several weeks ago and is now on the decline. New wells being added from time to time are not sufficient to maintain the former output.

During the past week no new locations were made in the Seminole City district proper. A survey of the field shows 14 rigs standing and 92 wells drilling. Thirty-seven drilling wells are below 3700 feet, 20 are between 3100 feet and 3700 feet, 29 are between 2000 feet and 3099 feet and six are drilling at distances less than 2000 feet.

The bulk of the new work in the Seminole district is being done at Earlsboro and Bowlegs, with Bowlegs the most active. The work at Searight is largely confined to routine development.

During the past week there were no new locations made at Searight. There are only three rigs and 29 drilling wells in the field. Three of the drilling wells are at work above 2000 feet, four between 2000 feet and 3099 feet, five between 3100 and 3700 feet and 17 below 3700 feet.

Bowlegs leads all other areas with a total of 178 operations. Thirty-seven wells are drilling there below 3700 feet with 25 or more due for completion shortly.

An important development in Bowlegs during the past week was the failure at the Tidal Oil Company's Sally 1, in the southeast corner of the northwest of the northeast of 9-8-6. The well is a hole full of water at the total depth of 4444 feet in the Wilcox pay.

Three quarters of a mile south of production, the Sinclair Oil & Gas Company has a 1000-barrel well with its Bowlegs test in the northwest of the northeast of the southeast of 22-8-6.

Production will no doubt be found between this test and the Bowlegs field proper, but it is not probable that production will be picked up much further to the south. This is indicated by the Sinclair Oil & Gas Company's Adams 1 in the northeast of the southeast of the southeast of 22-8-6.

The possibilities of connecting the Seminole City pool in 9-6 and the Bowlegs in 8-6 with a line of producing wells is as yet undetermined. The Mid-Kansas Oil and Gas Company's well on the Fesley farm in the northeast of the southeast of the northeast of 3-8-6, the area between the two fields, has been put on the air lift and proves to be a much better well than was anticipated. During the first 24 hours that the well was on the air, it made 916 barrels.

Much new work is beginning around the Mid-Kansas Fesley and the outcome is being watched with much interest.

A couple of miles north and west of Bowlegs, the Gypsy Oil Company is drilling in the Sylvian shale with its No. 1, in the southwest corner of 5-8-6. The Hunton was topped at 4041 feet and the base found at 4057 feet. The well reports a show of oil and gas. It is thought that the well is running high enough to assure production in the Wilcox at that location.

Logan County's Second Well

Bryan and Emery are adding the second producer in Logan County at their Scott 1, in the northwest of the southwest of 33-9-4w, north of the town of Crescent. The sand was picked up at 4038 feet at this location several weeks ago, but testing has been held up with cement failures. Drilling was resumed during the latter part of the week, but the plug is still to be completely drilled out. The well has a good show of oil.

The Roxana Petroleum Corporation, McCully 1, in the northwest of the southeast of 30-19-4w, is setting the 5-inch casing at a total depth of 5696 feet. No information of the status of the test is available.

Welch, Acton and Brown and J. V. Bailey at their Lovell 1, in the northwest of the northwest of the southwest of 9-18-4w, are drilling in hard white lime at 4356 feet.

The Texas Pacific Coal and Oil Company, Speaks 1, in section 33-18-4w, is drilling at 2010 feet. The same company's Rahe 1, in section 27, is drilling at 1900 feet.

Wood-Gilbert-Wood, Gragg 1, southeast of 16-18-4w, is drilling at 3941 feet. The Haley, Quier 1, southwest of southwest of southeast of 33-18-3w, is drilling below 2000 feet.

The T. B. Slick Wood 1, near Coyle, in section 27-17-1e, is reported shut down below 4600 feet. The roads in Logan County have been very much improved by a few days of sunshine and work is picking up again.

Seismograph Survey in California

Taft, Calif.—In the district north of Buttonwillow, and about 13 miles southwest of Wasco, the General Petroleum Corporation, with headquarters in Los Angeles, is using a seismograph to test out the region for a possible potential field. This activity has been carried on by the General Petroleum Corporation in Kern County now for about two weeks.

Navy Agrees to Close In Elk Hills Wells

Washington, D. C.—All navy wells in Naval Reserves One and Two are to be shut down under an agreement just consummated with the Belridge Oil Company by which the navy will receive 55 per cent compensating royalty from the increased production due to the shutting down of the government wells, it has been announced by the navy department.

An agreement covering the shutting down of wells has also been made with the Standard Oil Company, also operating wells in an adjoining section. Negotiations are pending for the shutting down of the two gas wells now in operation.

Bids received at San Francisco last week for the exchange of royalty oil for oil for the tanks at Pearl Harbor have been rejected and the navy will sell at the market the 200,000 to 250,000 barrels of oil received monthly. The money is being turned into the United States treasury. It is planned to ask congress for authority to purchase fuel and to transport it to Pearl Harbor in navy bottoms with navy personnel, it being estimated that this can be done at the same cost of 4 cents per barrel as shown in the bids as the difference between the cost of delivery at the Pacific Coast and at Pearl Harbor. It is believed that the navy will gain $600,000 as a result of this method toward establishing a permanent reserve of 4,100,000 barrels of fuel oil at Pearl Harbor. There are now 1,500,000 barrels of oil in storage at that point.

Bids for Navy's Elk Hills Oil Not Satisfactory

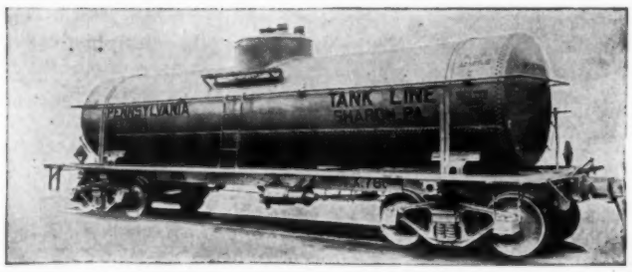
Washington, D. C.—With only three bids received at San Francisco April 11 for the exchange of fuel oil in return for naval royalty crude oil, and those three unsatisfactory to the government, the navy department is considering the rejection of all proposals and the possibility of selling the royalty oil on the market, purchasing fuel oil with the proceeds of the sales.

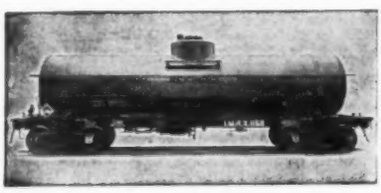
Officials of the navy, including Secretary Wulbur, met with Owen J. Roberts and Atlee Pomerene, special government oil counsel; Senators Hale and Swanson of the naval affairs committee, and Senator Walsh of Montana, who led the senate oil investigations, for a discussion of the bids. Following the conference it was stated by Secretary Wilbur that no definite decision had been arrived at, but he made it clear that the government was disappointed with the results of the San Francisco opening.

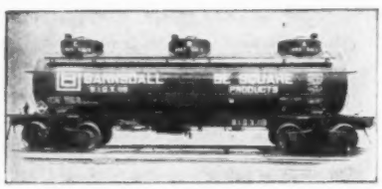
Ben Rogers, who has been in charge of the abstract and title department of the Marland Oil Company of Texas with headquarters at Fort Worth, has resigned to join the land and lease department of the Roxana Petroleum Corporation at Dallas.

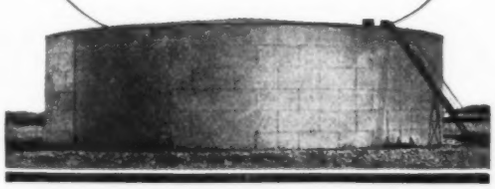
P.I.W. STEEL PLATE CONSTRUCTION

Now Builds the









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The PETROLEUM IRON WORKS COMPANY

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West Texas Restrictions Are Removed By Line Completions

(Continued from page 36)

The Church & Fields area in Crane County increased its flow to a new peak of 35,000 barrels early this week, and is now believed to be nearing the peak production level. All wells in the field are being produced at their maximum rate, while several producers were placed on air for brief periods over the past week with good results. Gulf Production Company's University 6 widened the upper end of the field two locations to the east with a natural flow of 17 barrels oil per hour after penetrating 124 feet into the big lime to a total depth of 3075 feet, with a surface elevation of 2597 feet. Gulf's University 7 flowed 30 barrels hourly this week at 2989-3020 feet.

The most prolific lease in the Church & Fields area at present is the 80-acres held jointly by the Eastland Oil Company & Collett-O'Keefe, and the four wells on this tract have been averaging close to 7000 barrels pipe line oil daily for the past six days. Ten completions were made during the past week for a combined daily output of 11,530 barrels.

The McCamey-Hurdle district in Upton County was promised a two-mile extension to the southeast early this week, when the Prairie Oil & Gas Company's Allie Lane 1, section 3, GC&SF survey, swabbed 15 barrels on five-hour test while drilling pay at 1867-1970 feet. This well is located in the northwest corner of 40-acre lease, and logged the salt at 465 feet and the lime at 1845 feet, with a surface elevation of 2506 feet. Snowden & McSweeney's Hughes 1, located in the Teer survey, flowed 80 barrels by heads during the first 13 hours from pay at 2326-27 feet, and is shut down to build storage. This well logged the salt at 585 feet and lime at 2132 feet, with elevation of 2679 feet.

Eastland County Gets 2300 Barrel Well

Ranger, Texas. — Eastland County's largest producing well for several years was scored early this week when the McLester Oil Company et al's Thorp 1 gauged 2300 barrels of high gravity oil after deepening six inches in the pay to a total depth of 3801½ feet. This well is located on the west side of the Ramsower pool in the upper part of the county, and was originally completed early last week flowing 1570 barrels at 3800-01 feet. This area was overlooked during the early development of the north end of the county, and attention was aroused in October, 1926, when Col. Gordon and others brought in a 500 barrel well on the Ramsower farm at 3720-23 feet. The discovery well has been a consistent producer, but a second test on the same tract was abandoned as a dry hole in the deep pay last month, while Root et al also drilled a nearby failure, indicating the spotted nature of the pay.

Cranfill-Reynolds Oil Company's semi-wildcat test on the Spencer-Conner farm in south central Eastland County proved up a mile of new producing territory in the McAllister-Morgan district with a natural flow of 35 barrels per hour from the Marble Falls lime at 2976-95 feet. This well is located on a line between the McAllister discovery well and the Independent Oil & Gas Company's Morgan producer, and in the north central part of a 120-acre lease in section 15, block 3, H. & T. C. survey. The Cranfill-Reynolds Oil Company's new strike was rated at 500 barrels daily by heads at 2976-91 feet late last week, and the increased flow followed the deepening of the hole four feet.

Continental Builds Line From Montague County

Wichita Falls, Texas.—Fifty miles of four-inch pipe will be strung by the Continental Pipe Line Company to transport the Continental Oil Company's crude production in the Nocona field, Montague County, to its refinery at Wichita Falls. Construction work on this crude line will start immediately, and will be the fourth outlet for the Nocona field, since Humble, Sinclair and Prairie are serving producers. Continental has 4950 barrels of settled daily production in the Nocona field, and has a large reserve amount of proven acreage to maintain production over a long period.

The Texas Company Gives Up Texas Charter

Houston.—Stockholders of The Texas Company were in meeting Wednesday afternoon to vote upon the liquidation of the company and transfer of the physical assets of the company to The Texas Company of Delaware following the changing of the company from a Texas to a Delaware charter and the increasing of the new company's capital from $10,000 to $150,000,000, divided into 6,000,000 shares of $25 par each.

This action, when voted, makes no material change in the company, and The Texas Company will continue to operate as before, with no change in the personnel or offices.

Florence Locations

Denver, Colo.—The Continental Oil Company, spurred on by its success in the Florence field, has made four new locations for wells. They are all in the Canon City extension and are near wells recently completed with an average production of nearly 100 barrels daily. Production is found chiefly in broken shales and no basic source has ever been found.

Testing Show of Oil in Harper County, Kansas

Wichita, Kansas.—The Berry Petroleum Company Burke 1, in the northeast of the northwest of 19-32-5w, near Danville in Harper County, Kansas, is drilling deeper to test out its show for oil in the chat in the top of the Mississippi lime at 4325 feet. The well was reported to have 100 feet of oil in the hole.

To the south, the Bu-Vi-Bar Petroleum Corporation is fishing at 3786 feet in Caton 1 in the center of the southwest of 22-34-6.

Deep Test Planned For Kevin-Sunburst

Great Falls, Mont.—The California Petroleum Company will drill a deep test near the center of the Kevin-Sunburst field, after carefully considering the possibilities of the lower sands. Geologists have studied the action of the wells producing in the upper sands and believe that vertical faults may be responsible for the fact that very large wells have been completed alongside small pumpers. In some instances it is pointed out shallow wells have seemed to be little short of fountains. At least two deep tests have been drilled in the field and in one a light oil was found. The California test will be located on section 27-35-3.

Activity Increases West of Belridge Field

Maricopa Flats, Calif.—Quite a bit of activity is going on in the region of Section 1-29-20, west of the old Belridge field because of a recent finding in the Shaw 1 wildcat well being drilled by Max L. Pray.

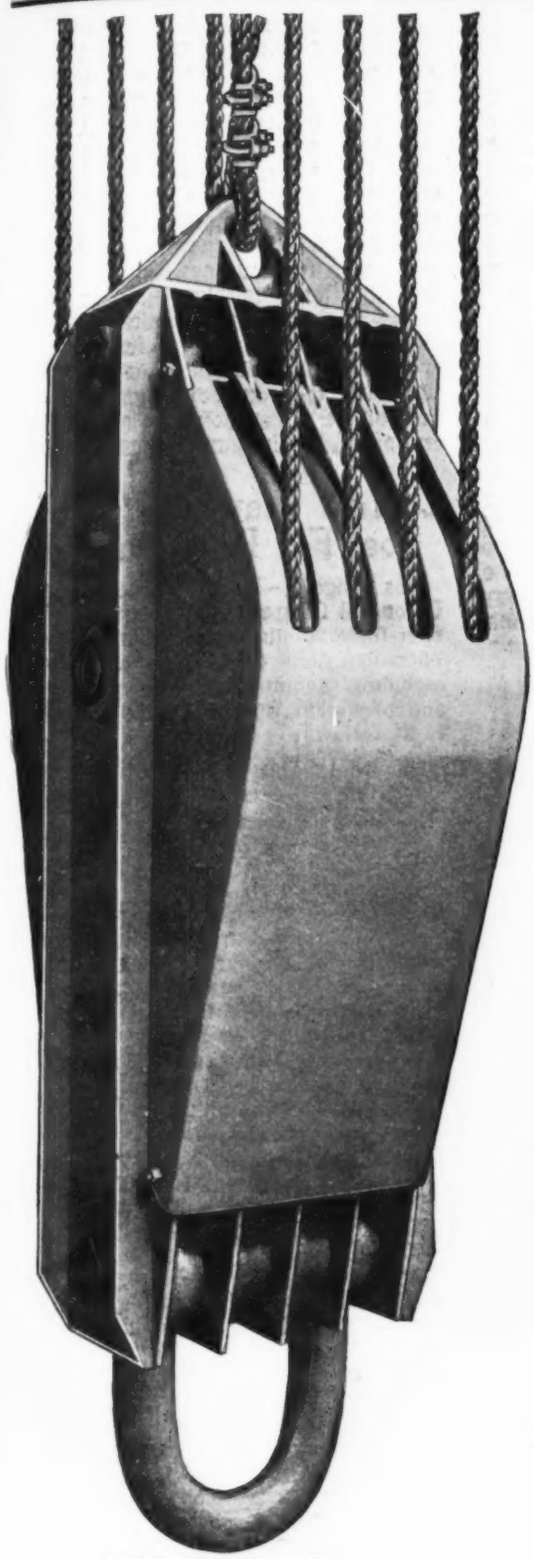
This well is reported to have encountered 18 feet of oil sand at a depth of about 850 feet, which produced 30 barrels of 12 degree gravity oil.

On the strength of the showing made in this Shaw No. 1, the Pray Interests will spud in on a second well which will be carried down to a greater depth, due to the fact that better sands are expected between 1100 and 1300 feet.

The Standard Oil Company of California is building a camp on Section 1-29-20, and Frank Meline, California real estate man, has taken over considerable acreage in this vicinity.

Lockport Output Up

Houston.—Lockport reached a new peak early this week following completion of Vacuum's Miller 14, Sunday, for 2000 barrels of 24.6 gravity crude from 16 feet of pay to a total depth of 4389 feet, the field's output being 9614 barrels Monday.



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Walworth Company
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Gas Men Discuss Storage and Transportation

Continued from page 28

lines. The percentage was verified by several other corpanies.

Mr. Hill of the Interstate Pipe Line Company said that on a recent installation made by his company, the cost of a coating from which long time protection was expected, was about 10 per cent of the cost of the pipe. This company made extensive investigation before proceeding with the work and examined numerous kinds of coatings in various parts of the country. Two engineers went to California and inspected more than 100 miles of pipe that had been in the ground about 14 years

The coating used on the California line was duplicated on the Interstate job. Pipe came from the factory, bare. It was then scraped with heavy wire brushes made especially for the work. These brushes were curved to fit the pipe. When thoroughly clean, the pipe was covered with a cold bituminous primer. Then as the pipe was rotated slowly just before being laid, a hot coating of coal-tar, pitch-base varnish was applied. Special turning stands were built to enable rotation of the pipe as the varnish was being put on.

B. P. Stockwell, representing the Oklahoma Corporation Commission, told of lines in Oklahoma that have been in the ground for 10 years without showing any appreciable deterioration. One particular line to which he referred had been covered with a hot mixture of two parts pitch and one part coal tar, wrapped tightly in tar paper and then another coating of the mixture put on. He declared that this line was as good as new when it was dug up to be replaced by a larger one.

Gasoline Storage Methods

Methods of storing natural gasoline were outlined by Emby Kaye, superintendent of the gasoline department, Skelly Oil Company. Mr. Kaye forcefully urged that producers of natural gasoline be prepared to store their output, stating that the market for natural gasoline can be stabilized only through ample storage for the raw product. He pointed out that storage to take car of individual plant output for at least 60 days would be sufficient to prevent distress situation, such as exist now. "Surplus production is now making the buyer's market," he emphasized, "and the price is being determined by gasoline going through the broker's hands."

He traced the history of natural gasoline development, stating that as the product has become more stabilized, the size of storage tanks has increased. The cost of storing, according to the speaker, is roughly as follows: 10 cents per gallon for the unstable product in 7x30 tanks, 5 cents for the semi-stable product in 10x40 tanks, about 1 1-3 cents per gallon in 25,000 barrel insulated tanks.

Underground storage of natural gasoline was discussed and the experience of a few companies with this type of storage related. Underground storage results in less temperature variation, it was brought out, but this type of storage is expensive and the danger from leakage loss is great. For these reasons companies are slow in installing underground tanks.

Conservation

In his remarks on co-operation with regulatory bodies, B. P. Stockwell of the Oklahoma Corporation Commission, stressed the necessity for better understanding between utility corporations and State regulatory organizations. Industry should go to the commissions on the basis that their problems are mutual, in the opinion of the speaker, and he concluded by saying that it is easy to deal with a man who has your point of view, urging the gas and oil industry to see that the commissions and conservation bodies get the industry's viewpoint.

Mr. Parker of the Texas Railroad Commission, sketched the organization and growth of the Oil and Gas Division of the Texas Railroad Commission. He also brought out the purpose of the railroad commission.

A representative of the Louisiana Conservation Commission spoke of the splendid co-operation between the organization he served and the major companies. He stated that the only trouble the commission has ever encountered has been with the "shoestring" operator.

Reports were heard from the membership and technical and research committees, just before adjournment of the meeting.

Since January, 77 new members have been added to the association rolls.

It was voted unanimously to hold a meeting this fall, either in September or October, the place to be decided upon later.

Total registration for the Dallas meeting was 186.

Barnsdall Uses Gas Lift to Flow Seminole Wells

(Continued from page 34)

passing through the aerial coils, but there is quite a noticeable difference in the "feel" of the inlet and out-flow lines, one being uncomfortably hot, while the other is comfortably cool (in the words of a plant operator).

Leaving the compression plant at a pressure ranging from 400 to 450 pounds the gas is conducted through a header line to the distributing manifold. Eight lines lead from the header, or manifold, to the field. The two extra outlet lines are provided against the time when it will become necessary to flow the other wells on the lease by gas pressure. At present there are but six wells on gas pressure. Each line leaving the header is double valved, to provide for absolute shut-off when a well is taken off the compressor. The volume of gas entering each well is controlled by orifice plates placed in the lines leading from the header to each well. In the event any well needs more or less volume of gas to secure the proper flow or production it is necessary to shut the pressure off of the well for a few minutes, during which time the flange is taken apart and the orifice plate removed for the insertion of a larger or smaller orifice, whichever may be required. One Foxboro automatic recorder controller controls the volume of gas flow to one well operating under the gas lift method.

Union Earnings Show Loss For First Quarter

Los Angeles.—Profits earned by the Union Oil Company of California during first three months of this year, from all operations, less general expenses, taxes including income tax), interest charges and provident fund were approximately as follows:

	1927	1926
Profit subject to depreciation, etc	$5,150,000	$5,525,000
Provision for depreciation, depletion and drilling expenditures..	2,550,000	2,825,000
Net profit for three months	$2,600,000	$2,700,000

Production, subject to royalties, of crude oil and natural gasoline by the company for the three months approximates 4,300,000 barrels, an increase of 550,000 barrels over the same period in 1926. During the quarter, 15 wells were completed in California and six in Colorado, while four wells in California and three in Colorado were drilled into deeper sands, the combined intial daily production of the 28 wells being 5800 barrels.

Sales for three months approximates $18,070,000, an increase in value of $700,000 over the same period last year.

Capital outlay approximates $3,000,000. This represents briefly the acquisition of additional territory, field development outlay and expenditures on refining and marketing facilities.

Current assets, consisting of cash, accounts and bills receivable, oil inventories and materials and supplies, at March 31, 1927, amount to $54,000,000, a decrease of about $2,300,000 from December 31, 1926. Current assets are about 6 to 1 of current liabilities. The quantity of crude oil and refined products in storage at March 31, 1927, approximates 19,400,000 barrels.

Current liabilities at March 31, 1927, approximate $9,400,000, a decrease of $190,000. The net decrease in all indebtedness during the three months was about $600,000,000.

Quarterly dividend of 50 cents per share was declared on April 8, payable on May 10, to stockholders of record at the close of business April 18, 1927. The stock transfer books of the company will not be closed. During the three months cash dividends were paid amounting to $3,789,305.

It's a Wilson

Efficient circulation *and* control while drilling

WILLARD CIRCULATING HEAD

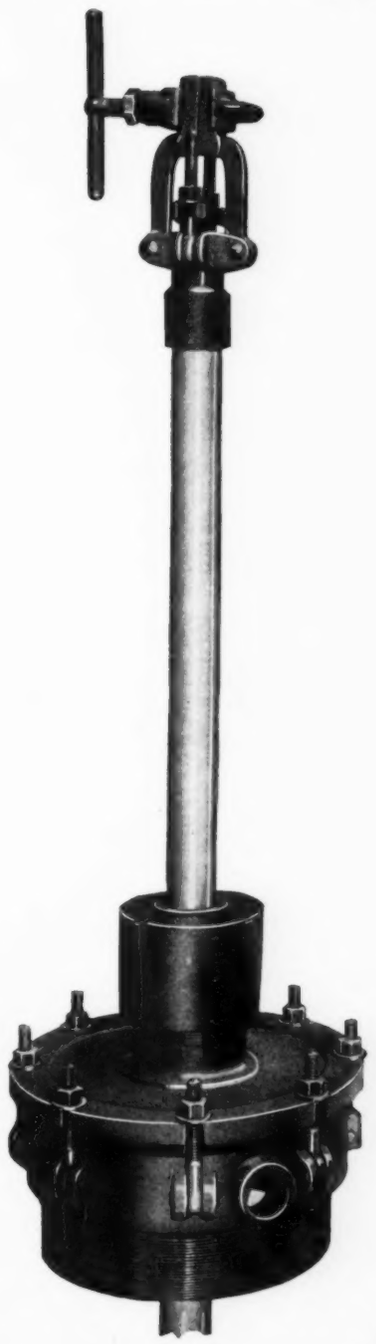
Maintains pressure control
Eliminates hazard of poisonous gas
Successful for cementing
Permits penetrative circulation
Saves oil

This efficient device permits satisfactory circulation at all times and is adaptable to various uses. It has been the preference for 17 years.

The Operator can continue to drill while holding down heavy gas pressure with mud.

In some fields where it is the custom to drill through sands quite a distance ahead of the casing, frequently as much as 300 feet, mud and sometimes water only is pumped through the head, passing into the sand instead of being brought back to the surface. This head, with extra large capacity, provides satisfactory circulation under these conditions.

Two Sizes—Standard and Extra Heavy



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Say you saw it in The OIL WEEKLY

Crude Storage in Texas Increased in March

Fort Worth, Texas. — Crude oil stocks in North, Central and West Texas districts increased approximately 2,089,430 barrels during March, making a total of 38,960,975 barrels on hand at the close of the month. The Texas Panhandle district gained 2,387,280 barrels for a new record of 14,674,400 barrels, while the gain in this district was partially offset by withdrawals from the McCamey-Big Lake district in West Texas, and also in North Texas. The Mexia-Corsicana district gained 101,030 barrels during March, with a portion of this increase being due to Prairie Oil & Gas Company delivering Panhandle crude via tank cars to Mexia tank farms.

The Mexia-Corsicana district is credited with having 11,931,775 barrels of crude in storage at the close of March, representing a decline of 6,087,025 barrels, as compared to the total stocks held in this district at the close of March, 1926. This district probably has a greater amount of steel tankage standing idle than any other section of the Mid-Continent, as the empty tankage on April 1 amounted to 14,630,000 barrels. Slightly more than nine million barrels of large storage has been dismantled in this district within the past year, and the removal of tanks is still under way, with Humble and Pure taking the lead.

Approximately 5,000,000 barrels of empty steel storage facilities are available for use in the North Texas district centering around Wichita Falls and across the river from Burkburnett. Owners of this idle tankage have been making leases lately to North Texas producers desiring to store their current production pending the return of attractive crude prices.

West Texas Production Details

San Angelo, Texas.—Daily average production in the 14 counties producing oil in the West Texas district for the week ending April 13 is listed below by fields, with the number of producing wells included:

Crane County

	No. Producing Wells	Daily Average Prod.
Church & Fields—		
Humble Oil & Ref. Co.	4	7,765
Simms & Atlantic	5	4,495
Eastland Oil Co. et al	4	4,410
Tidal Oil Company et al	6	3,420
Gulf Production Co.	3	2,940
Geo. Church & Bert Weekly	1	2,400
Cromwell & Pickrell	1	1,070
Magnolia Pet. Co. et al	12	650
Prairie Oil & Gas Co.	6	525
Geo. Church & Fields	1	115
Stidham & Thrasher	1	10
Totals	44	27,800
Gulf-McElroy—		
Gulf Production Co.	15	10,235
Marland-Hughes—		
Marland Oil Co. et al	20	1,480
The Texas Company	10	445
McMan Oil & Gas Company	1	85
Independent Oil & Gas Co.	1	....
Totals	31	2,010
Totals for Crane County	90	40,045

Upton County

Roxana Petroleum Corp.	28	4,850
Marland Oil Company	89	4,005
Dixie Oil Company	27	3,255
TP Coal & Oil Company	11	3,200
Independent Oil & Gas Co.	24	1,235
Prairie Oil & Gas Co.	4	960
Gulf Production Co.	11	375
The Texas Company	16	415
Amerada Petroleum Corp	5	395
Humble Oil & Ref. Co.	7	390
Sun Oil Company	10	370
Simms Oil Company	3	185
Wentz Oil Corporation	3	155
Republic Prod. & Marland	5	95
Texon Oil & Land Co.	1	45
Atlantic Oil Prod Co.	1	35
Atlantic & Bryant	1	....
McMan Oil & Gas Co.	1	7
Totals	238	19,972

Pecos County

Mid-Kansas & Transcontinental	4	(*)600
Texon Oil & Land Co.	1	15
Totals	5	615

Reagan County

Big Lake Oil Company	103	19,790
Texon Oil & Land Co.	72	7,940
Totals	175	27,730

Winkler County

Gulf Production Company	1	495
Southern Crude Oil Purchasing Co.	1	360
Totals	2	855

Jones County

Phillips Petroleum Co.	7	1,290
Marland Oil Company	3	710
Mid-West Exploration Co.	4	515
Atlantic Oil Prod. Co. et al	1	75
Totals	15	2,590

Mitchell County

The California Company	81	2,620
Magnolia Petroleum Co.	19	650
Atlantic Oil Producing Co.	8	530
Eastland Oil Co. et al	9	335
Tidal Oil Company	2	25
Fred Carey et al	1	15
Totals	120	4,175

Howard County

Marland Oil Company	24	1,550
Magnolia Petroleum Co.	21	860
Lockhart & Carey	4	145
Reeves-Apperman et al	1	110
Bristow & Merrick	1	95
Humble Oil & Ref. Co.	2	55
Comet Petroleum Co.	1	50
Gulf Production Co.	2	50
Dixie Oil Co.	1	30
Totals	57	2,945

Crockett County

Humble & Marland Oil Co.	9	805
J. K. Hughes Dev Co.	4	220
Republic Production Co.	2	175
Carl Cromwell	5	150
Gulf Production Co.	6	140
Humble Oil & Ref. Co.	2	95
Roxana Petroleum Corp.	1	20
Totals	29	1,605

Glasscock County

Marland & Texon Oil & Land Co.	1	60

Scurry County

Northwest Company	4	30

Loving County

Lockhart & Company	2	25

Ector County

J. S. Cosden, Inc.	1	20

Garza County

Emerald Oil Company	1	5
Grand total for 14 counties	740	100,672

(*)Production partially pinched.

Positively the last appearance of Jenny Lind

FOR a long time this was the greatest joke in America. Jenny Lind's last appearances were legion.

And it is almost as much of a joke nowadays to see claims that a product—"eliminates abrasive wear." It can't be done.

Stelliting the surface of a wearing part with Haynes Stellite will *cut down* abrasive wear. It will increase the length of service of the part from three to twelve times. But even Stellited parts wear out—after a while (although we have never found anything that approaches Haynes Stellite in its resistance to abrasion).

It is simple to make Stellited parts. All you have to do is melt a rod of Haynes Stellite in the oxy-acetylene flame and flow the molten metal over the wearing surface. (Yes, you can build up your old, wornout parts, and use them again.) This layer of Haynes Stellite certainly does last. We do not ask you to believe it. Try it out. We'll be glad to show you where it can be used.

Our booklet—STELLITING METAL PARTS—will interest you.

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Where Efficiency Means Everything

Monster Wyoming Gas Well harnessed with Darling Gate Valves. No. 1 Wertz Well of P. & R. Corporation, Lost Soldier, Wyo. Initial Flow 43,000,000 Cubic Feet.

By Invitation Member

It hasn't always been an easy problem to find a Gate Valve that would safely harness a high pressure gas well. If you've been "up in the air" on the subject give the Darling Gate Valve a trial and you'll soon admit that your problem is solved.

Darling Gate Valves are playing an increasingly important part in the production of oil and gas. Their year-in and year-out dependability —their ease of operation—and their never failing ability to stay tight, all these qualities are being more and more appreciated by men in the oil and gas fields who are anxious to produce economically and show the greatest possible returns on the investment.

Men who use Darling Valves say that their efficiency reduces production losses to a minimum. They seldom need replacement and seldom need repairs. Built of the best materials with exacting workmanship, their superior performance is a result of years of untiring engineering and experimentation.

Let us send you diagrams showing details of construction. Sent upon request, together with catalog.

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DARLING GATE VALVES

Say you saw it in The OIL WEEKLY

Left.—Grading the main highway into Seminole. This is the second grading and scraping during a day. Center—Muddy streets are good parking places for tractors during the lunch hour. Right—Tractor parked in the street while the driver eats lunch.

Transportation Real Problem At Seminole

Public authorities co-operate fully with operators in attempt to keep traffic moving, and it does day and night

By GEORGE REID
Staff Representative

When a large oil field, like the districts comprising the Seminole area, is in its rush stage of development, and whether the time is winter or summer, the major problem of the oil producing companies, the townships and the county in which the development is taking place, is road building and maintenance. A passable roadway is not only essential to the transportation of thousands of tons of oil field equipment, but it is imperative—and the demand invariably exceeds the supply. Oil companies, individual operators, counties and communities, by co-operating and through the constant expenditure of money, time and labor, find that their utmost effort is required to maintain ever a passable road through the producing districts and to individual properties. And a passable oil field road, especially at Seminole, would undoubtedly be classed as impassable in any section where no oil field existed. The average motorist would gladly drive a couple of hundred miles around a 25 mile stretch of roadway of such condition as in the oil field is said to be "good." A good road at Seminole indicates that with good judgment, easy, careful maneuvering of the automobile, one may pass over it—slowly. Speed is out of the question.

The extremes are from mud to dust. Either is bad, with mud probably having the edge on the dust in being the worse. When Seminole is muddy, the driver can see his road and the traffic thereon. When dust prevails, he carries his load a bit easier over the roads, but he can not see ahead. Each rolling vehicle, truck, tractor, wagon, horse, or auto leaves behind its individual cloud of dust and contributes its share to the large impenetrable cloud of dirt that hangs over the active oil field. The roadbeds are about the most rugged and uneven, alternated with deep "chuck" holes and high centers, and in some manner the majority of the bridges have grown upward—from a foot to three feet above the level of the roadbed. Spare tires in this country are wired to the front bumper, some tie them on the roof of the closed cars. If this important adjunct to the auto is not removed from the rear end tire rack, then the bridges and ditches, and deep "chuck" holes will soon attend to it's dislodgement.

Constant Repairs

The county agencies in both Seminole and Pottawatomie Counties have more than doubled their equipment for road grading and maintenance. They have concentrated a large force of their men, graders, road drags, and tractors in the "afflicted" area, and from sun-up to dark, the roads are worked. The

CONGESTION OF TRAFFIC AT SEMINOLE, ANY DAY, ANY TIME

TEAM OF 24 MULES PULLING A FIELD BOILER THROUGH SEMINOLE MUD

principal thoroughfares, over which the traffic is almost incessant, night or day, are daily graded and dragged. At night the heavy hauling of the oil fields, the 10-ton trucks, the 20-horse teams, and the great tractors each pulling a long string of trailers, continue to move over the highways, for there is some less traffic at night, and continue to damage the dirt roads. Usually every morning sees the highway surface again deeply rutted, with more holes dug out here and there, and the work of repairing starts all over again. When rains interfere with road work, the job is immense when again clear weather presents itself.

An accompanying illustration shows two of the county scrapers working over the main highway leading into Seminole City from the north in the early afternoon. This stretch on this particular day had been scraped and graded twice, and for an oil field road (five miles away from the center of activity), it was in excellent condition. This stretch demands constant attention, for over it passes practically all of the north and south bound traffic from and to Shawnee, Oklahoma City and Tulsa.

Probably the most popular method of hauling materials in the field is the caterpillar tractor and immense high-powered trucks. The truck has speed and will take care of quite a load of material, but when speed is not of vital importance, the tractor is dispatched, and behind it follows from one to four trailers, each of which will return with a load perhaps equivalent to the single truck. One operator, owning a fleet of tractors with this peculiar crawling traction device, stated that nothing had ever stopped him yet, and that when he wanted right-of-way on the roads, wanted to blaze his own trail and get there without the factor of great speed, he dispatched a 10-ton tractor to do the job around four or five 24-mule teams, and forgot about it. In time the lead comes snorting, roaring and steaming in. There s one certainty, the drivers of other vehicles will move out of the tractor's way, for they are never quite sure that the snorting thing can stop, and they are almost certain that it can't turn out with much speed, and since the average tractor driver knows full well that he can't be harmed, and that the other fellow is bluffed at the beginning, then he simply feeds the gasoline to the motor and snorts on down the road.

The second illustration was taken on the streets of Seminole City, where the driver had been forced to leave the main street and park in the center of a muddy side street, but mud is nothing in his life. Others avoid it, but he eats it up, and consequently a parking space is always open. Another ingenious tractor driver has disconnected his trailing loads and left them at the side of the highway a mile out of town, while he broke his way through the continuous stream of slow moving traffic, bluffed them out of his way, and drove into Seminole to eat his mid-day meal.

Horses and Mules

In all oil fields the horse and mule is ever available. Thousands of them contribute their muscle power to the job of transporting equipment about the areas under development at Seminole. In teams from six to 24 head to the load, they clutter up roads in their slow but positive movement. The teamster never hurries, he sets his slow walking pace and holds to it, and hours mean nothing to him. Driving around the oil fields means driving around score after score of wagons, heavily loaded and pulled by the ever present mule. One picture shows a 24-mule team transporting a boiler through the mud. Here also is shown one method used by the highway builders in filling up the numerous "chuck" holes. The rock is soft sand stone, and though thrown into the holes in large lumps, the ever moving traffic soon crushes it into fine pebbles and finally into sand. Whenever a hole becomes impossible and is reported, the road men appear with a load of rock and try to fill it up and keep it filled. The passable but hazardous holes are entirely too numerous to warrant filling until they become actually impassable, and this number is sufficient to keep a great many men busy at the filling operation.

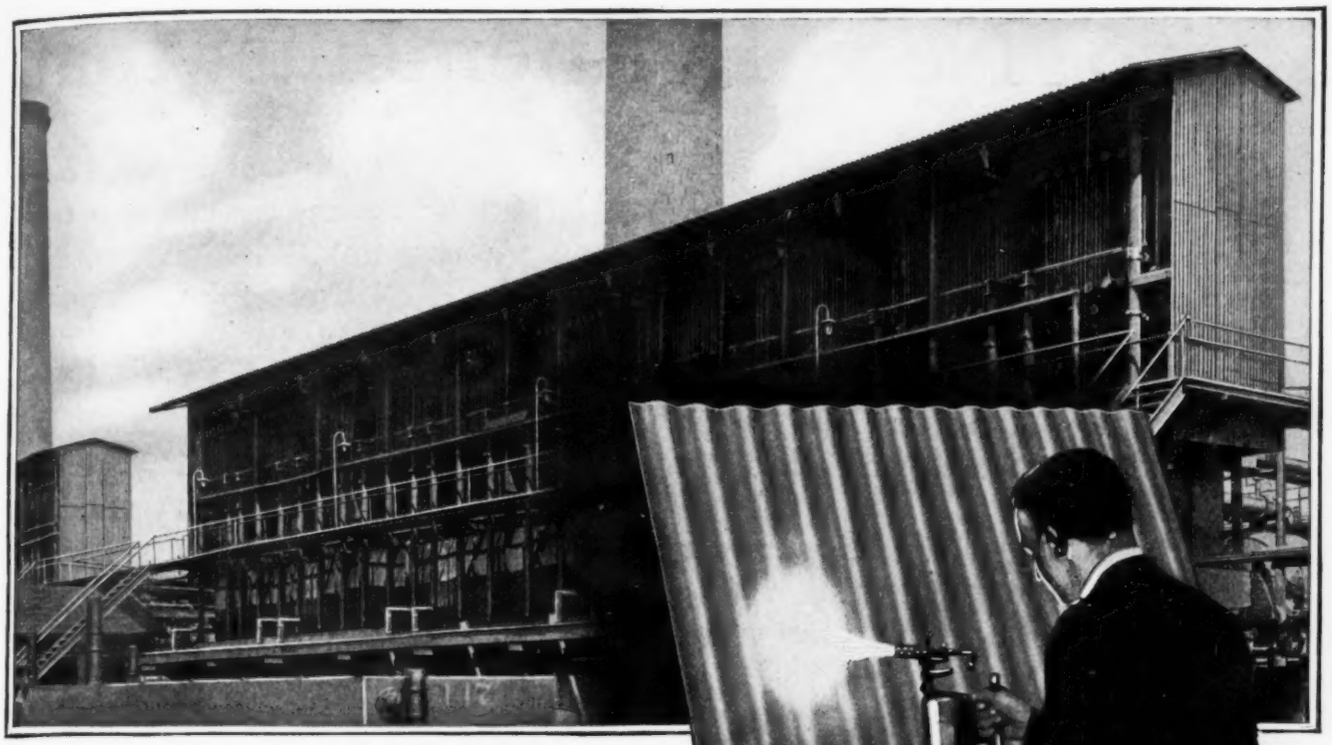
A traffic jam in this extensively and intensively developing area, which comprises a total length from the south pool in 8-6, up through Seminole proper, to Searight and over to Earlsboro, of about 18 or 20 miles, is nothing of a pleasure. There is no regulation, for too many thousands of conveyances are bound for too many scores of destinations to attempt regulation. Patience is supremely tested. In five miles of roadway from Seminole down the Bowlegs field, by far the worse stretch of roadway in Oklahoma, and unquestionably the busiest, the automobile driver may expect to consume from one hour to four getting through. A 40-mile drive around the fields from the town of Shawnee is easily the better method of approach, and then one finds the road from Maud for eight miles into the 8-6 field in almost as bad condition and with the traffic ever growing and increasing, as the 8-6 development progresses. The eastern entrance into the south or 8-6 field is perhaps the best, driving into it from Wewoka, 11 miles east of the field, and this is no speedway, by any means. From Shawnee the fields of Earlsboro and Seminole proper are easier to reach, and this drive of 20 miles to Seminole can be done in about one and one-half hours, but with spots which require much care in getting over them with safety.

Dust Forces Care

There is one good rule to follow in driving through the fields during summer weather, and when the dust cloud renders the road ahead invisible, and that is, "don't pass anyone until you can see." In muddy, rainy weather no rules are needed, for very likely the deep ruts will keep the auto wheels in the "straight and narrow," and passing around the vehicle in front is out of the question.

With the coming of summer months, and with the almost perpetual care that the highways are receiving in the producing fields, these conditions will improve. Continued spring rains, however, will result in continued bad, rough and rugged roads, and there can be no enchantment lent by a prospective trip through Seminole. With tractor, teams, trucks and auto, the roads are constantly being mended and repaired, but these same agencies of tractor, teams, truck and auto, in almost incalculable number are constantly transporting men and material over the trails, with the result that the work of repair can not progress speedily enough to offset the work of destruction until the rush is over.

A BUNCH OF VACCUUM OIL MEN LOOKING OVER THE TOWN OF EASTLAND, TEXAS. LEFT TO RIGHT—A. A. MURRELL, LAND MAN, GEORGE LUCK, SUPERINTENDENT, AND O. A. DISNEY, GEOLOGIST



The Transite housing protects expensive welded-joint condenser piping against possible fire from the still side.

Transite stands the blow-torch test. It is all mineral.

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Transite Corrugated Asbestos Roofing and Siding

FIRE, weather, and time have little effect upon Transite Corrugated Asbestos Roofing and Siding —hence it is an ideal fire barrier where oil industry equipment should be protected.

Use it for housings, walls and roofing around aerial condensers, tanks, rundown lines, and other vital points where the spread of fire would do serious damage.

Use it also as a permanent non-rust roofing and siding for regular building construction. It is not only more fire-safe but costs less per year than roofings which require upkeep.

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Say you saw it in The OIL WEEKLY

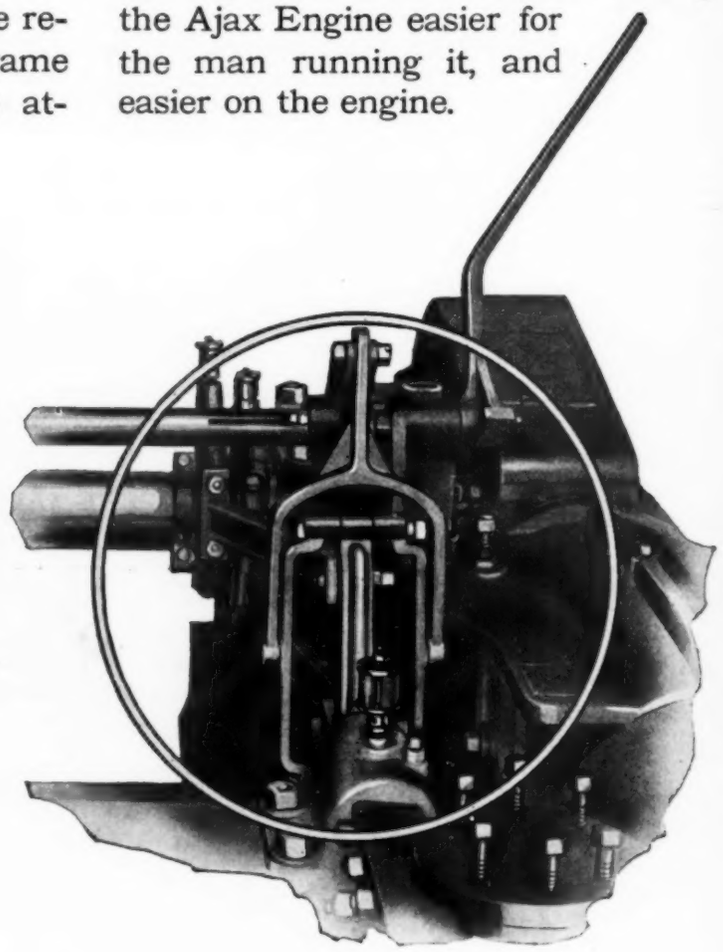
Two New Refinements that

New Link Lifter Improves Ajax Reverse Mechanism

SMOOTHER reversing operation, less wear on all parts connected with reversing the engine are the gains made by this recent improvement on Ajax Single Cylinder and Ideal-Ajax Twin Drilling Engines.

As the photograph shows, the reverse link is now enclosed in a frame to which the link lifter yoke is attached at a point opposite the center of the link.

Lifting the link from center instead of from the end as formerly cuts down the motion and the shaking of the reverse lever during the reversing operation. It makes reversing the Ajax Engine easier for the man running it, and easier on the engine.



Photograph of new Ajax reverse link lifter. Ajax was the first to use the link reverse and the first to use hardened and ground link roller.

AJAX ENGINES

AJAX-DRILLING

make the AJAX a better engine

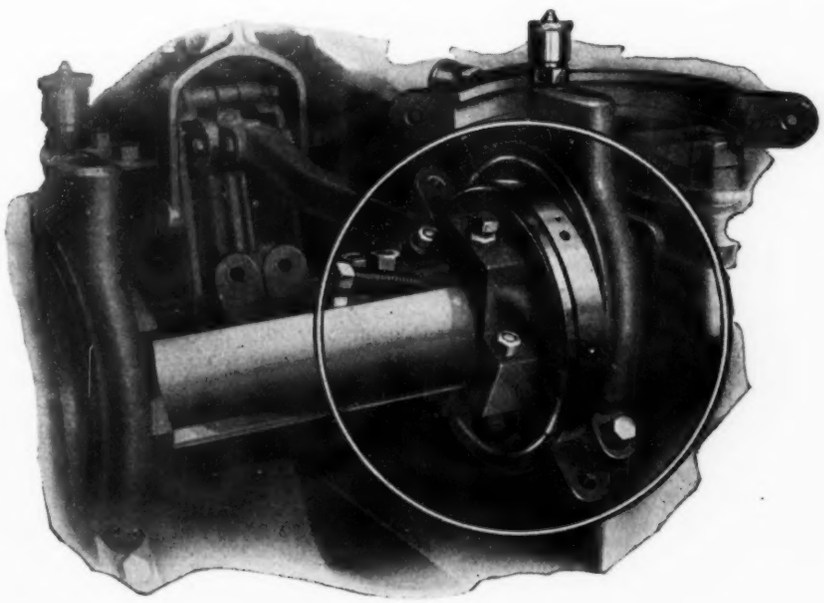
AJAX and Ideal Engines now have a bronze bushing inserted between the eccentric strap and the eccentric hub.

No More Worn Out Eccentric Straps or Hubs on Ajax Engines

The bushing takes the wear and it can be easily replaced. Eccentric straps to fit the new bushings are of malleable iron.

Not only does the use of this better bearing metal at this important point improve the operation of the engine; it also saves the Ajax operators the necessity of replacing worn out eccentric hubs and straps in the future.

Owners of old Ajax Engines can replace with the new straps and bushings as the hubs are interchangeable with new models. National Supply Company Branches carry the new parts in stock.



Photograph shows how the new bronze bushing fits between eccentric hub and strap. It has oil holes for lubrication.

Made by

AJAX IRON WORKS, CORRY, PA.

DISTRIBUTED BY THE NATIONAL SUPPLY COMPANIES

In every oil field

STEAM ENGINES

No. 34190

Say you saw it in The OIL WEEKLY

Some Sub-Surface Problems of Applied Thermodynamics

(*Continued from page* 26)

sand, and since the type of expansion can only be approximated by guess work, how can it be said that a higher gas factor means more inefficient production when the reverse condition within limits, seems by the above analysis to be nearer the true state of affairs.

Stating these conclusions numerically, the same initial amount of gas will do approximately 65 per cent more work if expanded isothermally rather than exponentially, but will show at the surface a 65 per cent greater gas factor.

(4) Back Pressure

When back pressure is applied to a well by any of the different possible means, the difference between the rock pressure P_a and the well head pressure P_b is reduced.

While the range of the volumetric expansion is consequently reduced between these two pressures, the normal expansion would ordinarily be completed beyond the point where P_b exists and if the gas is measured at its lowest pressure, there would appear no reduction in volume. Therefore the thermodynamic reason for the reduction in the gas factor when using back pressure must be due to some other than the above reason.

A well which will respond with a lower gas factor to the application of back pressure is necessarily assumed. It is known that in such a well the gas factor will be high if the well is wide open; that as the back pressure is gradually increased the factor drops to some minimum point and with the further addition of back pressure the factor begins to rise, that is, the amount of gas increases per barrel of oil produced. This latter state of affairs is usually accounted for by the reduced oil production; even though the gas is reduced, the oil production may be reduced at a greater rate and the factor will therefore rise.

Another possible explanation lies in the fact that as the ration (P_a/P_b) is reduced by increasing the back pressure the expansion is caused to more nearly approach the isothermal type due to the relative greater amount of oil present in respect to the gas. As more work is done isothermally than otherwise, less "outside assistance" or less extra gas is required from the oil remaining in the sand and not at the moment being produced, to flow the actual production. Then when the point of minimum gas factor has been reached, the gas in the oil being produced is doing its maximum work.

Beyond this point, i.e., with the continued increase of the back pressure and consequent throttling of the oil flow, the gas in that oil continues to appear at the surface, but accompanied by less and less oil, this amounting to an increasing gas factor.

This explanation is offered as a possibility. Not enough investigation and study has been made of this subject to make any definite statements or recommendations, but it is suggested as a line of investigation.

(5) Velocity of Expulsion

In this example friction will not be considered, nor restrictions and effects of changes of direction of flow.

The present assumed well produces oil through 2½-inch tubing, at the rate of 1 barrel or 5.6 cubic feet per minute. It will also be assumed that gas to the amount of 25 cubic feet per barrel of oil entering the well is dissolved gas; that is, it is initially contained in the oil itself, either in the form of dissolved gas or liquified gas, no extraneous free gas entering. No correction is made for the actually smaller amount of oil present, due to the dissolved gas.

The cross-sectional flow area of 2½-inch tubing is 0.0325 sq. ft. Then with 5.6 cubic feet of oil with its dissolved gas entering per minute, the entrance velocity is 172 feet per minute.

Due to the drop of confining pressure as the flow takes place from the entrance to the exit of the tubing, the gas will come out of solution and appearing as free gas, will expand. The total volume will increase and as the flow area remains constant, the velocity will of necessity increase as the top is approached.

For isothermal expansion the total volume entering the trap will be 5.6 cubic feet oil plus 303 cubic feet gas or 309 cubic feet; the resulting velocity is 9500 feet per minute. For exponential expansion the total volume is 190 cubic feet at a velocity of 5800 feet per minute.

Now consider the percentage relation between the relative volumes of gas and oil at the bottom and top of the well. As no free gas enters by the assumption for the examples there is 100 per cent oil and 0 per cent gas entering the well in each case. At the surface the following conditions obtain:

With isothermal expansion, 309 cubic feet of a mixture of gas and oil is produced, of which 5.6 cubic feet or 1.8 per cent is oil and 98.2 per cent is gas. With exponential expansion 190 cubic feet of oil and gas is produced of which 5.6 cubic feet or 2.9 per cent is oil and 97.1 per cent is gas.

Summary of Example (5)

The velocity figures would probably be greatly reduced by frictional effects, which vary approximately as the square of the velocity and which, for such velocities as the above, would surely be of quite large proportions. These figures will also help to explain why even a good sized oil well may look, when turned into the atmosphere, like a gas well with a "showing" of oil. The energy of such a jet velocity would be enormous, and if only a part of the energy is spent in friction and various destructive effects on valves and traps, it can be seen what the results are likely to be, especially if there are a few sand grains present in the flow.

As has been previously stated, the relative proportion of oil and gas present in the flowing production determines the type of expansion, that is, whether it approaches the isothermal or exponential type. The gas varies in the above example from 0 per cent to around 98 per cent of the flowing volume. It seems reasonable, then, to assume that, after the oil with its dissolved gas has entered the well and due to the drop in pressure as the mass of fluid ascends the casing or tubing, the gas is freed from solution and begins to expand, the isothermal type of expansion exists at the bottom or very near the bottom of the well; the expansion then gradually changes to the exponential type and when the surface is reached it is through that, the proportion of oil being so small, the expansion is very near the adiabatic type, having passed through all stages of the value of s from 1 up to the value of the adiabatic expansion of that gas, maybe 1.29 for this gas.

(6) Gas Required to Lift One Barrel of Oil

One barrel of the assumed oil weighs 350 pounds. To lift one barrel of oil 3000 feet will require 1,050,000 foot-pounds of work. All frictional and other losses are disregarded.

(*a*) *Isothermally* $s=1$.

The work accomplished by 1 cubic foot of gas entering the well with the oil from the sand and which will expand to 12.1 cubic feet at the well head is:

$$W=P_bV_b \log_e \frac{P_a}{P_b}=6091\times12.1 \log_e \left(\frac{73{,}771}{6091}\right)=186{,}464 \text{ ft. lbs.}$$

Then 1,050,000 ft. lbs. ÷ 186,464=5.6 cu. ft. of this gas expanded isothermally will theoretically lift the barrel of oil.

(*b*) *Exponentially* $s=1.25$

V_b in this case=7.4 cu. ft.

$$W=\frac{P_bV_b}{s-1}\left\{\left(\frac{P_a}{P_b}\right)^{\frac{s-1}{s}}-1\right\}=\frac{6091\times7.4}{0.25}$$

$$\left\{\left(\frac{73771}{6091}\right)^{0.2}-1\right\}=116{,}338 \text{ ft. lbs.}$$

Then 1,050,000÷116,338=9.0 cu. ft. of this gas expanded according to $s=1.25$ will theoretically lift the barrel of oil.

(c) Summary of Example (6)

This shows that if such a control could be had as to require the expansion of the

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gas to approach the isothermal type, the oil could be lifted by the expenditure of 5.6 cubic feet of high pressure gas while by the exponential expansion 9.0 cubic feet of the gas would be required to do the same work, these volumes being measured at the surface.

As stated before, the lower the gas factor the nearer the expansion will approach the isothermal type of expansion, that is, the more oil present in relation to a certain amount of gas, the more heat can be taken from that mass of the oil rather than from the gas itself for performing the necessary work. Does not this condition of affairs then partially explain the working of and need of back pressure, especially in flowing wells, if the conservation of the energy of the high pressure gas in a sand, or what amounts to the same thing, greater ultimate recovery is the desired end?

Consideration of the amount of gas actually produced at the surface and corrected to some standard by the use of an efficiency factor, say 10 per cent, has at times led to incorrect figures and conclusions, because with the values (P_bV_b) eliminated from the two formulae for the work of expanding gases since these quantities are constant and common to both formulae, the remaining parts of the formulae will have varying values for increasing value of the pressure ratio (P_a/P_b); at a value of this ratio of between 8 and 10, depending upon the value of s, the work for exponential expansion becomes greater than the work by isothermal expansion. This is manifestly wrong and an error which has been known to appear when only surface volumes of the gas produced are considered.

(7) Temperature Consideration of a Flowing Well

By definition, an isothermal expansion is a constant temperature process and it is therefore eliminated from consideration, for it is known from experience that certain low temperature effects appear at the well head of a flowing well.

The relationship between pressure and temperature as previously given is:

$$\frac{T_a}{T_b}=\left(\frac{P_a}{P_b}\right)^{\frac{s-1}{s}}$$

Assume that the temperature at the producing sand is 200° F. or $T_a=(200+460)=600°$ absolute.

With $(P_a/P_b)=12.1$ the temperature of the gas at the well head and after the expansion will theoretically be:

$$T_b=\frac{T_a}{\left(\frac{P_a}{P_b}\right)^{\frac{s-1}{s}}}$$

$=660/(12.1)^{0.2}=401°$ absolute or $(460-401)=59°$ below zero.

With greater pressure ratios the resulting temperature will of course be lower:

Summary of Example (7)

Experience has shown that low temperatures exist when a well produces a relative large quantity of gas. While the temperature as found above for this pressure ratio would not actually appear due to the heat generated by friction and other causes tending to warm up the expanding gas, this example shows what theoretical conditions are approached. The above figure could no more be reached under the assumed conditions in practice than could a barrel of oil be lifted from the bottom of a 3000 foot well by the expansion of 9.0 cubic feet of high pressure gas. In both cases, the theoretical figures are modified by many variables which cannot be handled "on paper."

The Continental's Walden well is an outstanding example of some low temperatures resulting from the free expansion of gas; even though a large percentage of that well's gas was carbon dioxide, it merely emphasizes the tendency.

(8) Introducing Extraneous Gas Into An Oil Sand

The matter of the temperatures resulting from the introduction of high pressure gas into a sand for pressure replacement or a drive should be considered. The lowered temperature of gas as it expands from the mouth of the input pipe opposite an oil sand is liable to cause wax deposition and consequent sealing of the sand pores.

When gas is introduced into a key well it expands exponentially through the volumetric range corresponding to the difference in input and rock pressures. The internal energy of the input gas is drawn on for the heat necessary to perform the work of expansion and this loss of heat entails a drop in temperature of the gas.

The temperature relation corresponding to any pressure range is given by the following equation:

$$T_a/T_b=(P_a/P_b)^{(s-1)/s}$$

As an example of what T_b may be under certain working conditions the following data are assumed:

$T_a=60+460=520.$
$P_a=(560+12.3)\ 144.$
$P_b=(100+12.3)\ 144.$
$s=1.25.$

$$T_b=T_a/(P_a/P_b)^{\frac{s-1}{s}}=520\ /\ (5.09)^{0.2}$$

$=376°.$
or, $(460-376)=84°$ below zero.

Let the small letter "t" represent the temperature as shown by a thermometer; $(T=t+460)$. With higher values of t_a due to preheating the input gas the following values of t_b would theoretically obtain for the same pressure range:

t_a	T_a	T_b	t_b
60	520	383	— 77
80	540	397	— 63
100	560	413	— 47
125	585	431	— 29
150	610	449	— 11
200	660	486	+ 26
250	710	523	+ 63
300	760	560	+100

Summary of Example (8)

In practice the input gas if introduced through the smaller sizes of tubing would approach these conditions of expansion but if the gas were introduced into the well's casing where a large reservoir would exist, the expansive action would take place at the point of inlet to the casing rather than down at the sand. When the input gas enters through tubing, the space between the tubing and the casing would act as an insulating medium preventing the increasing ground temperature from warming the gas but if the input enters through the last string of casing, there would be a certain small temperature rise throughout the length of this string where it is in contact with the hole.

It is believed that upon the introduction of the gas into the well when using comparatively high initial pressure, the expansion which will immediately take place will cause the wax deposition on all parts of the sand available to the low temeprature gas even though a much higher temperature exists in the oil body. There will be little mixing of the oil and the gas at this stage and as a result, at least the surface pores will become clogged with the wax. As the pressure within a sand builds up and the pressure differential is reduced, the temperature drop would be correspondingly less until finally such a comparatively small flow would take place that it might be assumed that the temperature of the gas at the sand is practically at the temperature of the input gas.

These considerations would seem to indicate the practice of starting the work of a drive or pressure replacement by using low input pressures and gradually increasing as the pressure in the sand builds up; this would obviate the large pressure differential and consequent low temperature due to the corresponding expansion. But on the other hand, if the impulse or "kick" due to the initial application of a high input pressure is needed, preheating the input gas must be resorted to.

If the surface pores should become "waxed up" and then heated high pressure gas is introduced, it is possible that the melted wax might be pushed further back into the sand due to the excess of input pressure. It would therefore seem that the use of heated gas is dangerous in oil wells producing oil of high wax content.

(9) In Conclusion

Gas expansion in a flowing well will be intermediate in type between the isothermal or constant temperature expansion and the adiabatic or constant heat expansion. The first type is the ideal to be approached, for more work is accomplished starting with a given volume of compressed gas than by means of the adiabatic expansion of any of the possible intermediate types of expansion usually designated as exponential.

Dry gas by itself, in expanding, will follow the adiabatic law with the exponent "s" equal to the ratio of the gases' specific heats; the work of expansion is done at the cost of the gases' internal heat or energy, with the consequent temperature drop. But if the gas is accompanied by oil the expansion will approach

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That protective coatings are not the solution of the corrosion problem is evident to every practical pipe line man who knows how and where leaks occur. Better, more rust resisting pipe metal is the most logical way to longer pipe life and fewer failures.

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the isothermal type; the greater the amount of oil present in the flow, the greater the supply of heat available besides that contained in the gas itself, and the nearer the expansion will approach the isothermal type, where s=1.

The more oil present then as a general proposition, with the same amount of gas or in other words, the lower the gas-oil ratio, the nearer the expansion approaches the isothermal type and the greater the saving of gas, and the energy that it contains, for moving the remaining oil.

All the foregoing assumptions and figures are of a purely theoretical nature. So many inter-related variables enter into the practical situation that the problems are not subject to detailed mathematical treatment. After investigation and tests, covering all phases of the work enough data may be acquired that will permit some sort of estimating but at the present time and considering the fact that no two wells afford the same facts upon which to work, practical trials is the only known method for learning how best to handle a well.

But regardless of this state of affairs, the thermodynamic principles covered by the above examples are at work; when the modifying principles and their degree of influence are ascertained, then the practical problems will be capable of solution.

Julian Stockholders Approve Merger

Los Angeles, Cal.—Stockholders of the Julian Petroleum Corporation unanimously approved the sales consolidation of this organization with the California-Eastern Oil Company in a meeting held April 14. All holdings of the Julian organization are taken over by the latter company.

Net worth of the Julian Company was placed at $18,284,364 by Louis H. Evans, petroleum engineer, and the audit of Lybrand, Ross Brothers and Montgomery.

Five officials who will control the California-Eastern Corporation and elect its officials for the coming seven years are L. J. Ging, C. W. Durbrow, Harry J. Bauer, S. C. Lewis and John E. Barber.

All indebtedness of the Julian will be shouldered by the California-Eastern, according to the agreement approved by the stockholders, and in the stock transferred, one share of Julian preferred shall be worth three and four-tenths shares of the California-Eastern, the latter to have a par value of $10 per share. Common stock of the Julian will be traded in at two Julian for each California-Eastern. Under the agreement, Julian preferred is restricted to 525,000 shares, and Julian common to 600,000 shares.

Hayden Stone & Company of New York, West & Company of Philadelphia and the First Securities Company of Los Angeles are handling the financing arrangements.

Iles Dome Test Better Than First Reported

Denver, Colo.—First reports concerning the Midwest Refining Company's remarkable well on the Iles dome were not exaggerated but proved to be too modest in almost every particular. The well, which is located on section 22-4-92, was completed last week in what is supposed to be the Sundance sand and was the first producer of any importance drilled on the Iles structure. First reports stated the well was a 200-barrel producer. An actual test through a two-inch flow pipe showed a production of 2500 barrels. The well did not have a fair chance through such a small opening and the pressure indicated that it would have produced at a much higher rate had the connections been larger. The gravity of the oil was first reported to be below 29 degrees. A test of a barrel showed a gravity of almost 32 degrees, however.

The gasoline content of the oil is not as high as the gravity indicates, being only 13 per cent. The crude has an asphalt base, flows freely and is easily handled. The company has not announced where it will refine the oil. An exchange for crude closer to the company's own refineries is not held probable.

The Texas Production Company is allowing the Midwest to transport some of the oil through the former's line from Iles to Craig. In this way the Midwest interests will keep its storage empty at the field. Texas interests will allow the Midwest to use one of its large storage tanks at Craig. The two companies have used the small pipe line from Moffat to Craig for some time. The Texas Company owns a refinery at Craig, but is understood not to have bargained with the Midwest for any surplus of crude.

The discovery completely changes the complexion of operations in the district. Formerly where the Dakota had been found dry, wells were abandoned with little ceremony. Tow Creek and Moffat fields are near by and Sundance sand can be reached in both. The source of the shale oil in the Iles field was thought to be the Dakota sand.

Gushers Revive Activity At Kevin-Sunburst

Great Falls, Mont.—Echoes of gusher days in the Kevin-Sunburst field were again heard during the past week, when a brace of flowing wells were completed in widely separated areas. The completions are beginning to reflect the activity in the main pool, where operations were at a low ebb during the winter months.

The largest of these completions was the Homestake Exploration Company's State 25, which flowed at the rate of 900 barrels daily from a depth of 1440 feet. The well is located on section 36-35-2, a lease which has yielded many sensational producers in days past. The well has produced no water, which is in marked contrast to other wells completed on the east side of the lease. The well was forced to flow up hill through several hundred yards of line. It promises to settle down to a production above 500 barrels daily.

The Hill-O'Niel interests completed a 600-barrel well on the southeast quarter of section 28-35-2, further extending the producing limits of the Moe-Calpet pool, which had an extremely modest beginning. The well acted more like a consistent flowing producer than any of the other wells completed in the extension. The gas pressure was very great, raising the tools in the hole. The well is flowing by heads but with much force.

The Adams Oil Company maintained its excellent record in the field by completing a 200-barrel flowing well on the northwest quarter of section 33-35-1. Total depth was 1465 feet and the well was completed in the Ellis sand. The Haskins lease, on which the well was completed, has been one of the most consistent producers in the entire field.

Operators who had mourned a diminishing gas pressure in the field were somewhat encouraged by the flowing wells. Several wells are drilling near the sand in the best part of the field and their completions will be eagerly watched. Further discoveries of gas in the extensions greatly enhances the value of the leases within these confines.

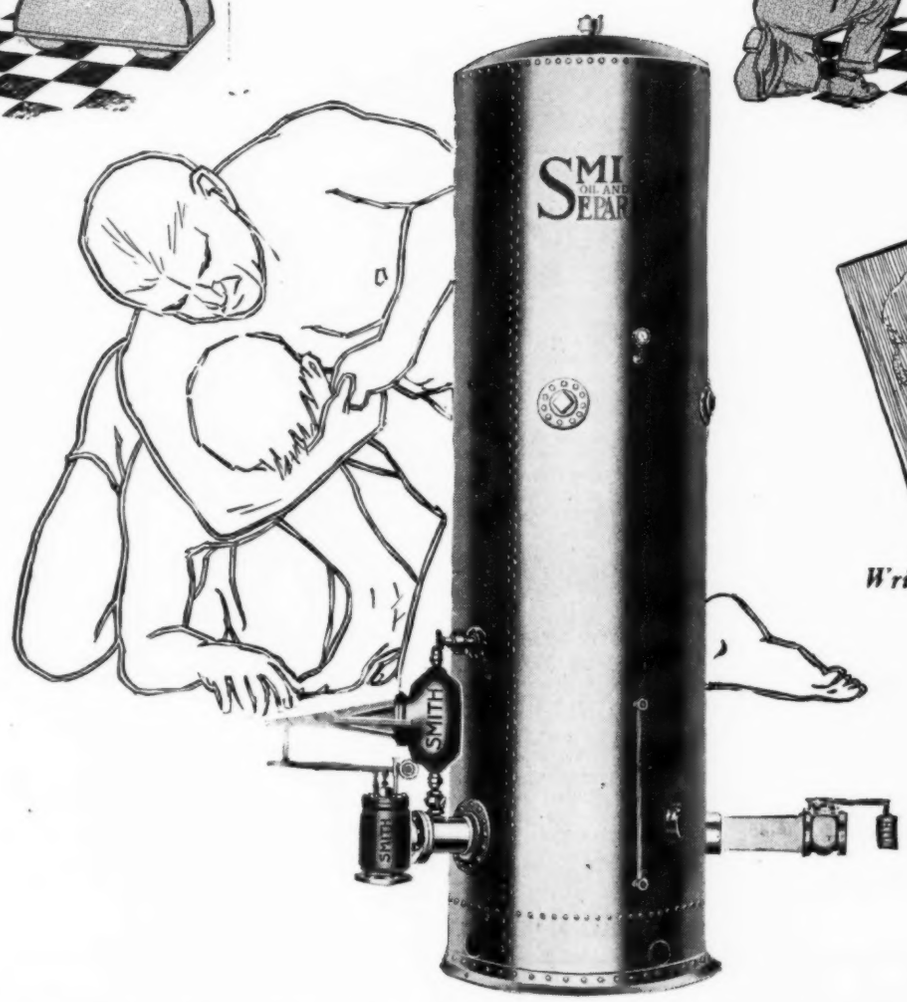
Radio Communication for Andean Company

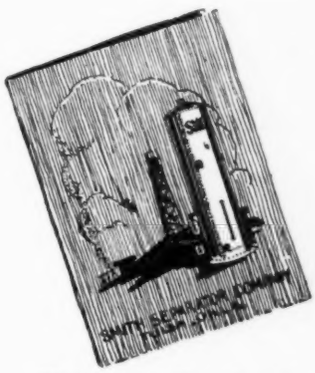
East Pittsburgh, Pa.—The Westinghouse Electric and Manufacturing Company has announced a commission from the Andean National Corporation to establish a system of radio communication between the pump stations along the 400-mile pipe line which carries the oil from the field in the interior of Columbia to the part of Barranguilla an the Caribbean Sea.

The Andean National Corporation has nine pump stations along the line, situated at 45-mile intervals. When the line was put into operation the conventional type of telephone communicating system was installed between the stations. The telephone line, however, literally threaded through the dense equatorial foliage, is exposed to the fury of every tropical storm. As a result, communication is frequently interrupted.

Andean officials hope to establish by radio a type of communication that will be more reliable than the present telephone system.

Two American radio engineers have gone to Colombia to install the equipment. They are L. C. Hollands and H. V. Johnson, of Pittsburgh, engineers of the Westinghouse Electric and Manufacturing Company.





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CRUDE OIL PRICE QUOTATIONS

CRUDE PRICE CHANGES

April 18.—Effective at the opening of the market today Joseph Seep Purchasing Agency reduced the price on both grades of Corning crude, 10 cents per barrel, making Corning, 35-cent grade, $1.45 per barrel, and Corning, 25-cent grade, $1.35 per barrel.

April 20—Effective at 7 a. m., Magnolia Petroleum Company reduced all grades purchased in Mid-Continent on gravity basis, 10 cents per barrel.

CURRENT POSTINGS

EASTERN STATES

	April 20 1927
New York Transit	$2.90
Bradford District	2.90
National Transit	2.80
Southwest	2.80
Eureka	2.75
Buckeye	2.60
Macksburg	2.80
Gaines	2.60
Somerset	1.70
Cabell	1.60
Ragland	.95
Corning, 35-cent grade	1.45
Corning, 25-cent grade	1.35
Keister	1.30

CENTRAL STATES

Illinois	1.60
Indiana	1.48
Lima	1.71
Plymouth	1.33
Princeton	1.60
Waterloo	1.18
Wooster	1.77

WESTERN KENTUCKY

Posted by Stoll Refining Company for crude from Allen, Warren, Franklin, Davies, Barren, All grades 1.50

MID-CONTINENT

Prairie, Sinclair, Gulf, Texas

Below 28 (Magnolia only)	1.10
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.32

	April 20 1927
39 to 39.9 gravity	1.34
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.38
42 to 42.9 gravity	1.40
43 to 43.9 gravity	1.42
44 to 44.9 gravity	1.44
45 to 45.9 gravity	1.46
46 to 46.9 gravity	1.48
47 to 47.9 gravity	1.50
48 to 48.9 gravity	1.52
49 to 49.9 gravity	1.54
50 to 50.9 gravity	1.56
51 to 51.9 gravity	1.58
52 and above	1.60

Magnolia Petroleum Company

Below 33	$ .95
33 to 33.9 gravity	.97
34 to 34.9 gravity	.99
35 to 35.9 gravity	1.01
36 to 36.9 gravity	1.03
37 to 37.9 gravity	1.05
38 to 38.9 gravity	1.07
39 to 39.9 gravity	1.09
40 to 40.9 gravity	1.11
41 to 41.9 gravity	1.13
42 to 42.9 gravity	1.15
43 to 43.9 gravity	1.17
44 to 44.9 gravity	1.19
45 to 45.9 gravity	1.21
46 to 46.9 gravity	1.23
47 to 47.9 gravity	1.25
48 to 48.9 gravity	1.27
49 to 49.9 gravity	1.29
50 to 50.9 gravity	1.31
51 to 51.9 gravity	1.33
52 and above	1.35

NORTH AND CENTRAL TEXAS

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie Moran and Nocona Crude

Humble O. & R. Co.* and Texas Co.

28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.0 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.32

	April 20 1927
39 to 39.9 gravity	1.34
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.38
42 to 42.9 gravity	1.40
43 to 43.9 gravity	1.42
44 to 44.9 gravity	1.44
45 to 45.9 gravity	1.46
46 to 46.9 gravity	1.48
47 to 47.9 gravity	1.50
48 to 48.9 gravity	1.52
49 to 49.9 gravity	1.54
50 to 50.9 gravity	1.56
51 to 51.9 gravity	1.58
52 and above	1.60

Corsicana Heavy, $1.00 per barrel, posted by Magnolia.

***Until further notice, Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes purchased at agravity lower than 28 degrees will be paid for at the posted price for 28 degrees gravity.**

SOUTH TEXAS

Mirando	1.00

SOMERSET

Grayburg

Below 33 gravity	$1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

GULF COAST

Grade "A" all companies	1.20
Gulf Coast Light Oil, Below 25	1.15
25 to 25.9 gravity	1.17
26 to 26.9 gravity	1.19
27 to 27.9 gravity	1.21
28 to 28.9 gravity	1.23
29 to 29.9 gravity	1.25
30 to 30.9 gravity	1.27
31 to 31.9 gravity	1.29
32 to 32.9 gravity	1.31
33 to 33.9 gravity	1.33
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.37
36 to 36.9 gravity	1.39
37 to 37.9 gravity	1.41

(Continued on page 66)

CALIFORNIA CRUDE OIL PRICES AT THE WELL

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity (degrees)	Signal Hill	Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Torrance	Richfield	Whittier La Harbra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14-9	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75
15-15-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
16-16-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
17-17-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
18-18-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
19-19-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
20-20-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	..	.77	.77	.77	.76	.76
21-21-9	.86	.86	.86	.86	.86	..	.86	.86	.85	.85	.86	.85	..	.79	.79	.79	.77	.77
22-22-9	.87	.87	.87	.87	.87	..	.87	.87	.85	.85	.87	.85	..	.81	.81	.81	.78	.78
23-23-9	.88	.88	.88	.88	.88	..	.88	.88	..	.85	.88	.85	..	.83	.83	.83	.79	.79
24-24-9	.89	.89	.89	.89	.89	.89	.89	.89	..	.85	.89	.85	..	.85	.85	.85	.80	.80
25-25-9	.90	.90	.90	.90	.90	.90	.90	.90	..	.86	.90	.86	..	.87	.87	.87	.81	.81
26-26-9	.92	.92	.92	.92	.92	.92	.92	.92	..	.87	.91	.87	..	.89	.89	.89	.83	.82
27-27-9	.94	.94	.94	.94	.94	.94	.94	.94	..	.88	.92	.88	..	.91	.91	.91	.85	.83
28-28-9	.96	.96	.96	.96	.96	.96	.96	.96	..	.89	.93	.89	..	.93	.93	.93	.87	..
29-29-9	.98	.98	.98	..	.98	.98	..	.98	..	.90	.94	.91	..	.96	.96	.96	.89	..
30-30-9	1.00	1.00	1.00	..	1.00	1.00	..	1.00	..	.91	.95	.93	..	.99	.99	.99	.91	..
31-31-9	1.03	1.03	1.03	..	..	1.03	..	..	..	..	..	.95	..	1.02	1.02	1.02	.93	..
32-32-9	1.06	1.06	1.06	..	..	1.06	..	..	..	..	..	.97	..	1.05	1.05	1.05	.95	..
33-33-9	..	..	..	..	..	1.09	..	..	..	..	..	.99	..	1.08	1.08	1.08	.97	..
34-34-9	..	..	..	..	..	1.12	..	..	..	..	..	1.01	..	..	..	1.11	.99	..
35-35-9	..	..	..	..	..	1.15	..	..	..	..	..	1.03	..	..	..	..	1.01	..
36-36-9	..	..	..	..	..	1.18	..	..	..	..	..	1.06	..	..	..	..	..	..
37-37-9	..	..	..	..	..	1.21	..	..	..	..	..	1.09	..	..	..	..	..	..
38-38-9	..	..	..	..	..	1.24	..	..	..	..	..	1.12	..	..	..	..	..	..
39-39-9	..	..	..	..	..	1.27	..	..	..	..	..	1.15	..	..	..	..	..	..
40-40-9	..	..	..	..	..	1.30	..	..	..	..	..	..	..	..	..	..	..	..
41-41-9	..	..	..	..	..	1.33	..	..	..	..	..	..	..	..	..	..	..	..
42-42-9	..	..	..	..	..	1.36	..	..	..	..	..	..	..	..	..	..	..	..

This Sign will tell motorists you sell correct lubrication

THIS sign *always* identifies the station along-the-highway where a motorist can buy *the Oil* which will give him correct lubrication.

The motorist is learning that where he sees this sign he gets the *right grade* of motor oil to seal the power in his engine at every degree of wear.

Only Opaline Motor Oil is recommended on the basis of engine-wear—*as indicated by the mileage on the speedometer!* And only Opaline Dealers have this sound method for increasing gallonage.

Sinclair supplies the Dealer with several grades of Opaline, and with the Sinclair Recommendation Index which tells when each grade should be sold. The authorized Opaline Dealer asks the motorist his mileage, the Index tells the grade—the motorist drives away with the kind of lubrication which brings him back for more!

May we tell you about this successful method of selling *correct lubrication* with the full line of Opaline Motor Oils?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

Entire contents copyrighted 1927 by Sinclair Refining Company, Inc.

	April 13 1927
38 to 38.9 gravity	1.43
39 to 39.9 gravity	1.45
40 and above	1.47

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 is $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

MARKHAM
The Texas Company

All grades	1.00

LULING

All grades	1.15

TEXAS PANHANDLE
Magnolia Petroleum Company

Hutchinson, Carson and Gray counties, all grades	1.25

Humble Oil & Refining Company, Gulf Refining Company and Kay County Gas Company

all grades	.95

Gray and Wheeler Counties
Humble Oil & Refining Company

28 to 28.9 gravity	.80
29 to 29.9 gravity	.82
30 to 30.9 gravity	.84
31 to 31.9 gravity	.86
32 to 32.9 gravity	.88
33 to 33.9 gravity	.90
34 to 34.9 gravity	.92
35 to 35.9 gravity	.94
36 to 36.9 gravity	.96
37 to 37.9 gravity	.98
38 to 38.9 gravity	1.00
39 to 39.9 gravity	1.02
40 to 40.9 gravity	1.04
41 to 41.9 gravity	1.06
42 to 42.9 gravity	1.08
43 to 43.9 gravity	1.10
44 and above	1.12

Crane-Upton-Crockett* Counties
Gulf, Humble and Kay County Gas Company

Below 26 gravity	.70
26 to 26.9 gravity	.72
27 to 27.9 gravity	.74
28 to 28.9 gravity	.76
29 to 29.9 gravity	.78
30 to 30.9 gravity	.80
31 to 31.9 gravity	.82
32 to 32.9 gravity	.84
33 to 33.9 gravity	.86
34 to 34.9 gravity	.88
35 to 35.9 gravity	.90
36 and above	.92

*Gulf does not post in Crockett County.

Magnolia Petroleum Company and Kay County Gas Company

Howard County (Chalk Field)	1.43

WYOMING-MONTANA
Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.33
Grass Creek	1.33
Rock Creek	1.25
Lost Soldier	.95
Lance Creek	1.33
Mule Creek	1.30
Notches	.65
Big Muddy	1.25
Osage	1.33
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.55
Lander	.80
Simpson Ridge	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek
Midwest Refining Company

29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 and above	1.30

MONTANA

Sunburst	1.35
Cat Creek	1.33
Lake Basin	2.20

	April 13 1927
NEW MEXICO	
Artesia	1.00
Hogback	1.38
CANADIAN CRUDE	
Oil Springs	2.18
Petrolia	2.11

*Bounty on Canadian crude is ¾ cent per gallon, or 26¼ cents per barrel.

LOUISIANA-ARKANSAS
(Standard of Louisiana, Louisiana Oil Refining Company, Gulf Refining Company of Louisiana and The Texas Co.) Homer, Haynesville, Caddo, El Dorado, De Soto and Chrichton.

Below 28 gravity	1.10
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.32
39 to 39.9 gravity	1.34
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.38
42 to 42.9 gravity	1.40
43 to 43.9 gravity	1.42
44 to 44.9 gravity	1.44
45 to 45.9 gravity	1.46
46 to 46.9 gravity	1.48
47 to 47.9 gravity	1.50
48 to 48.9 gravity	1.52
49 to 49.9 gravity	1.54
50 to 50.9 gravity	1.56

	April 13 1927
51 to 51.9 gravity	1.58
52 and above	1.60

Atlantic Oil Producing Company posts this same schedule on Homer, Haynesville, and West El Dorado.

Magnolia Petroleum Company has the same posting on Pine Island, Haynesville, Eldorado and Bull Bayou.

STEPHENS
(All Companies)

Below 28	1.00
28 to 28.9 gravity	1.02
29 to 29.9 gravity	1.04
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.08
32 and above	1.10

SMACKOVER
(Louisiana Oil Refining Company, Atlantic Oil Producing Company, and Shreveport-Eldorado Pipe Line Company)

Below 24 gravity	$1.00
24 to 27.9 gravity	1.13
28 to 28.9 gravity	1.17
29 to 29.9 gravity	1.19
30 and above	1.21

Other Companies

Below 24 gravity	1.00
24 and above	1.25
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	1.00
Cotton Valley	1.00
Calion	1.00

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS
(American Petroleum Institute Figures. Barrels of 42 gallons)

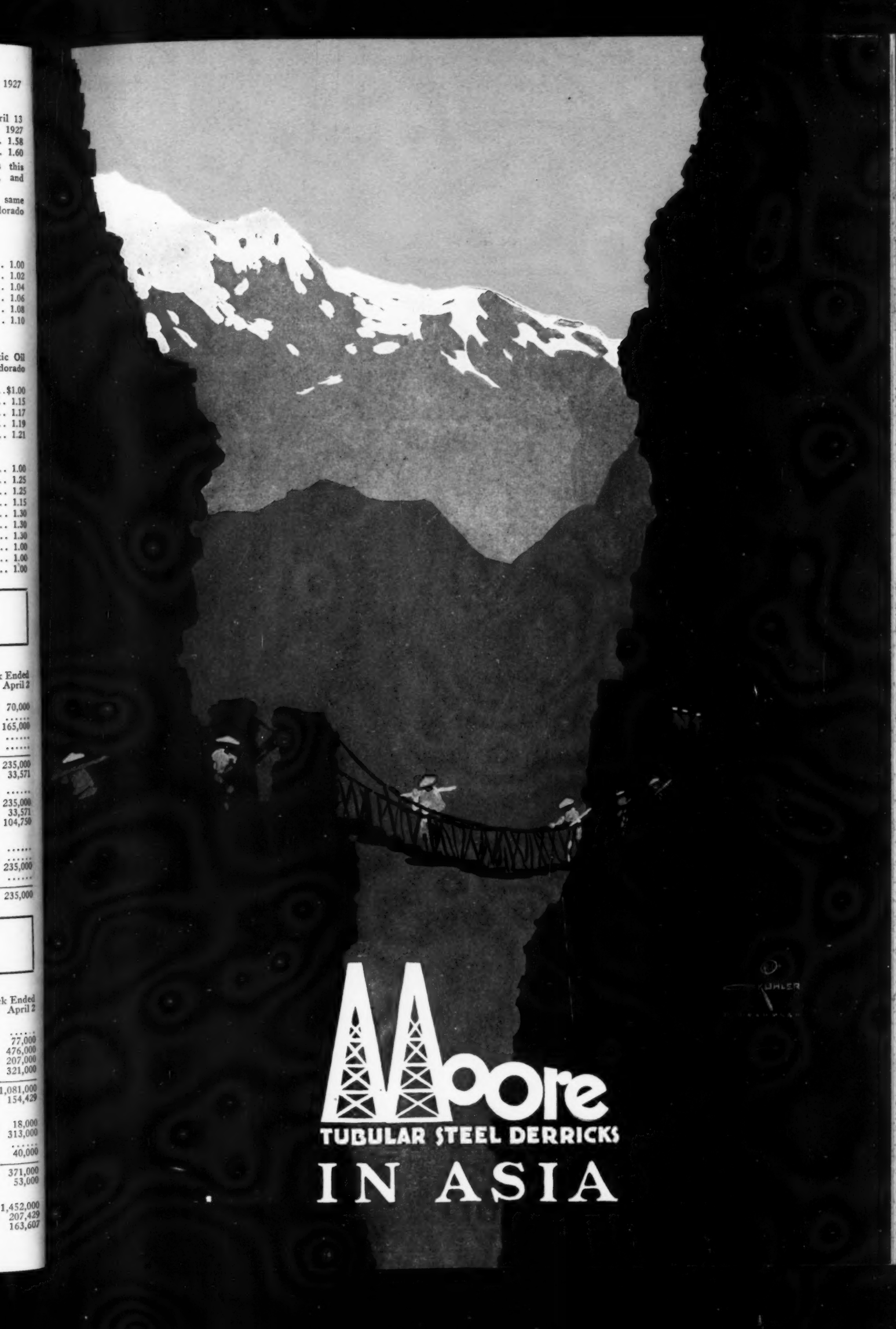
(Barrels of 42 Gallons)

	Week Ended April 9	Week Ended April 2
AT ATLANTIC COAST PORTS		
Baltimore	74,000	70,000
Boston	.....	.....
New York	75,000	165,000
Philadelphia	78,000	.....
Others	76,000	.....
Total	303,000	235,000
Daily Average	43,286	33,571
At Gulf Coast Ports	.....	.....
Total Atlantic and Gulf Coast Ports	303,000	235,000
Daily Average	43,286	33,571
Daily Average Four Weeks Ended	80,321	104,750
DISTRIBUTION OF TOTAL CALIFORNIA OIL RECEIPTS IS AS FOLLOWS:		
Crude	.....	.....
Gasoline	152,000	.....
Gas Oil	75,000	235,000
Fuel Oil	76,000	.....
Total	303,000	235,000

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS
(American Petroleum Institute Figures. Barrels of 42 gallons)

(Barrels of 42 Gallons)

	Week Ended April 9	Week Ended April 2
AT ATLANTIC COAST PORTS		
Baltimore	182,000	.....
Boston	136,000	77,000
New York	647,000	476,000
Philadelphia	.....	207,000
Others	165,000	321,000
Total	1,130,000	1,081,000
Daily Average	161,429	154,429
AT GULF COAST PORTS		
Galveston District	25,000	18,000
New Orleans and Baton Rouge	85,000	313,000
Port Arthur and Sabine District	.....	.....
Tampa	.....	40,000
Total	110,000	371,000
Daily Average	15,714	53,000
AT ALL UNITED STATES PORTS		
Total	1,240,000	1,452,000
Daily Average	177,143	207,429
Daily Average Four Weeks Ended	159,250	163,607


Moore
TUBULAR STEEL DERRICKS
IN ASIA

WORLD WIDE SERVICE FOR TWENTY YEARS

IN ASIA

Where towering mountain peaks seem to sit in judgment on the world of man, Moore Tubular Steel Derricks serve with unconcerned efficiency. Through difficult passes and over rolling plains, where transportation facilities are primitive and human labor untrained, these light-weight towers of strength are safely carried and easily erected.

Under such conditions, only the best is good enough. Moore tubular strength and manufacturing excellence give never-failing derrick service the world over.

Moore
TUBULAR STEEL DERRICKS

LEE C. MOORE & COMPANY, INC. PITTSBURGH · TULSA

Established 1907

Dallas, Texas **Houston, Texas** **Wichita Falls, Texas** **Isom, Texas** **Parkersburg, W. Va.**
Casper, Wyo. **Shreveport, La.** **El Dorado, Kan.** **El Dorado, Ark.**

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision;

Month—	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Ark.	Eastern States	Rocky Mountain	California	United States Ave.	Gross
January 1926	449,370	100,130	260,180	90,290	43,990	**181,190**	**101,000**	**102,300**	**621,300**	**1,946,980**	**60,356,380**
February	450,037	101,937	245,989	91,550	45,090	**169,676**	**99,000**	**98,412**	**605,250**	**1,909,637**	**53,469,836**
March	454,762	103,300	260,262	92,712	48,787	164,312	97,625	102,325	604,500	1,929,562	59,816,422
April	467,175	101,825	263,612	88,812	50,562	169,824	100,875	106,675	600,000	1,947,387	58,421,610
May	463,750	105,690	277,700	94,550	58,150	175,430	105,700	112,300	602,720	1,995,990	61,875,690
June	456,450	107,637	302,187	89,912	60,412	167,887	106,250	112,925	606,925	2,013,187	60,395,610
July	456,920	110,320	336,600	114,760	57,460	161,870	104,700	108,520	613,940	2,062,470	63,936,570
August	465,137	111,600	381,550	161,237	56,787	157,375	108,350	110,737	609,725	2,162,662	67,042,522
September	465,387	113,037	402,212	175,512	56,575	154,037	110,125	105,825	598,100	2,180,862	65,425,860
October	497,120	114,720	439,190	170,350	58,200	149,810	109,500	99,060	611,600	2,259,850	70,055,350
November	551,225	115,425	475,987	176,425	56,575	144,100	111,125	93,537	641,325	2,365,475	70,964,250
December	561,012	118,950	483,050	181,263	55,137	139,250	110,375	87,650	659,925	2,396,112	71,279,472
January 1927 ..	591,570	117,490	460,910	176,330	53,030	132,648	108,100	83,910	655,660	2,385,650	73,955,150
February, 1927 ..	683,775	116,200	479,175	154,975	52,850	128,362	107,250	85,237	642,775	2,455,612	69,157,136
March 1927	707,187	115,612	475,375	154,262	51,450	124,662	104,500	87,200	644,350	2,462,625	76,341,375
April 2	724,650	116,150	474,350	157,300	51,800	123,900	104,500	87,950	637,300	2,477,900	.....
April 9	725,100	117,000	474,850	156,750	52,250	122,400	106,000	82,750	641,200	2,478,300	.....
April 16	714,500	113,850	474,250	151,650	52,350	115,500	107,500	83,000	639,900	2,452,500	.....
Increase	.....	.....	.....	.....	100	.....	1,500	250	.....	.....	.....
Decrease	10,600	3,150	600	5,100	.....	6,900	.....	.....	1,300	25,800	.....

TEXAS
(Outside Gulf Coast)
PANHANDLE DISTRICT

	April 16	April 9
Hutchinson County	101,950	101,500
Gray County	8,500	8,200
Carson County	8 600	8 550
Wheeler County	2,850	2,800
Others	50	50
Totals	121,950	121,100

NORTH TEXAS

Burkburnett	12,900	13,600
Electra	14,300	14,600
Iowa Park-KMA	4,050	4,150
Wilbarger	13,150	13,300
Archer County	29,950	30,100
Clay County (Petrolia)	800	800
Baylor County	100	100
Montague and Cooke Cos.	13,250	13,500
Totals	88,500	89,550

WEST CENTRAL TEXAS

Stephens County	9,350	9,600
Eastland-Desdemona	6,750	6,850
Brown County	30,050	32,600
Coleman County	1,650	1,600
Callahan County	4,700	4,750
Shackelford County	13,902	13,600
Young County	8,000	7,850
Throckmorton County	3,650	3,500
Jack County	550	550
Palo Pinto County	2,000	2,000
Jones County	2,750	2,900
Mitchell-Scurry Cos.	3,950	4,200
Howard County	2,250	2 250
Reagan County	28,100	27,850
Crane-Upton Counties	60,200	56,500
Crockett County	1,150	1,300
Pecos County	3,250	3,500
Others	3,000	3,200
Totals	185,250	184,600

EAST CENTRAL TEXAS

Mexia	11,150	11,400
Currie	600	650
Richland	950	950
Wortham	3,800	3,800
Corsicana-Powell	19,300	19,500
Nigger Creek	5,800	55,850
Totals	41,600	42,150

SOUTHWEST TEXAS

Luling	17,950	18,200
Lytton Springs	2,300	2,300
Somerset	1,200	1,250
Laredo District	14,850	15,000
Piedras Pintas	50	50
Others	600	650
Totals	36,950	37,450
T'ls Tex. (Outside Gulf Coast)	474,150	474,850

TEXAS GULF COAST

West Columbia	10,100	10,150
Damon Mound	950	950
Big Creek	5,600	4,300
Boling	2,250	2,550
Blue Ridge	2,800	3,000
Pierce Junction	7,050	8,100
Humble	3,800	3,850
Goose Creek	9,200	8 950
South Liberty	3,700	3,700
Hull	17,300	16,350
Saratoga	1,150	1 200
Batson	1,400	1 400
Sour Lake	4,950	5,100
Spindle Top	50,800	56 500
Orange County	5,400	5,600
Others	6,000	6,200
Totals	132,450	137,900

OKLAHOMA

North Braman	6 650	6,700
South Braman	3,450	3,650
Blackwell	3,950	3,950
Hubbard	7,350	7,150
Thomas	1,450	1,450
Garber	23,150	17,250
Tonkawa	16,800	23,300
Burbank	43,350	44,150
Osage (outside Burbank)	35 100	35,200
Watchorn	2,650	2,600
Cushing	21,200	21,250
Yale Jennings	11,850	11,850
Davenport	3,400	3,600
Bristow Slick	27,300	27,250
North Okmulgee	17,250	17,250
Lyons Deaner	4,400	4,400
Stroud	1,400	1,400
Cromwell	13,250	13,450
Papoose	6,900	6,950
Wewoka	17,350	17,150
Duncan District	7,200	6,750
Earlsboro	41,300	38 800
Graham	8,300	8,300
Fox	1,850	1,800
Healdton	14,000	14,600
Seminole	284,700	295,500
Hewitt	9,900	9,900
Scholem Alechem	15,000	15,200
Others	64 250	64,300
Totals	714,500	725,100

CALIFORNIA

Seal Beach	31,500	30,700
Santa Fe Springs	43,000	44 500
Long Beach	93,500	92,000
Huntington Beach	76,000	75,000
Torrance	23,500	24 000
Dominguez	17,500	17,500
Rosecrans	11,000	11 500
Inglewood	37,000	37,500
Midway-Sunset	89 000	89,000
Ventura Avenue	50,200	51,800
Others	167,700	167,700
Totals	639,900	641,200

KANSAS

Florence-Covert	1,900	1,900
Peabody-Ebling	3,850	3,850
Eldorado-Towanda	13,250	13,250
Augusta-Fox Bush	4,600	4 600
Rainbow Bend	2,350	2,450
Russell	3,250	3,200
Greenwood County	40,500	41,100
Churchill	15,150	17,450
Others	29,000	29,200
Totals	113,850	117,000

LOUISIANA

	April 16	April 9
Homer	5 250	5,250
Haynesville	7,850	7,900
Caddo Light	9,800	9,800
Caddo Heavy	5,700	5,350
DeSoto-Red River	4,300	4,250
Elm Grove	650	650
Bellevue	1,600	1,650
Cotton Valley	6,050	6,100
Urania	11,150	11 300
Totals	52,350	52,250

LOUISIANA GULF COAST

Vinton	6,050	5.950
Lockport	8,100	7,700
Evangeline	1,000	1,000
Edgerly	1,050	1,100
Others	3,000	3,100
Totals	19,200	18,850
Totals Gulf Coast	151,650	156,750

ARKANSAS

El Dorado	6,150	6,150
Smackover Light	11,200	11,600
Smackover Heavy	90,750	97,100
Stephens	1,400	1,350
Nevada	1,400	1,500
Lisbon	4,450	4,450
Others	150	150
Totals	115,500	122,400

MOUNTAIN STATES

WYOMING

Salt Creek	39,950	40,700
Grass Creek	2,700	2,850
Elk Basin	1,000	1,000
Big Muddy	2,800	2,800
Lost Soldier	3,750	3,650
Rock River	2,800	2,000
Teapot Dome	400	400
Lance Creek	800	800
Others	2,100	2,400
Total	56,300	56.600

MONTANA

Cat Creek	2,350	2,350
Sunburst	12,500	12,000
Others	200	200
Totals	15,050	14,550

COLORADO

Moffats (Craig)	2 200	2,150
Fort Collins	3,300	3,300
Florence	700	700
Others	2,250	1,350
Totals	8,450	7,500

NEW MEXICO

Table Mesa	250	550
Artesia	1,900	1,950
Hogback	750	750
Rattlesnake	300	850
Totals	3,200	4,100
Totals Mountain States	83,000	82,750

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va. Pa., Ky., and N. Y.)	107,500	106,000

PRODUCTION SUMMARY

East of Rockies	1,729,600	1,754,350
United States	2,452,500	2,478,300

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
Huntington Beach Townsite—		
Cal.-Eastern Oil Co., Treat 2, wo..	1500	3886
Combs & Bailes, 1	450	4404
Huntington Beach—Old Field—		
Calif. Pet. Corp., Buck 3	400	4411
Long Beach—		
Rio Grande Oil Co., Flowerstate 1, wo	1187	5303
Athens-Rosecrans—		
Barnsdall Oil Co., O'Dea 15	2697	4955
Baldwin Hills—		
Associated Oil Co., Vickers 8, wo..	271	2538
Sunset—		
Obispo Oil Co., 7, wo	1200	3468
Midway—		
Gore Oil Co., A6	20	1000
C14	20	1000
C23	20	1000
C25	20	1000
Elk Hills—		
Union Oil Co., Elk Hills 19	54	3253
Kern Front—		
Carrec Oil Co., 1	70	1756

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
Butler County—Rogers et al, Drum		**Bitler**
14, sw ne se 20-26-8	75	2749
Tidal, Worrell 2, sw ne se 12-27-7..	15	2768
Phillips, Marmane 1, sw se nw 20-26-3	*	2888
Mid-Kansas Peak 1, ne nw 33-28-7..	*	3261
Douglas et al, Davis 1, nw sw ne 15-29-3	*	3104
Ramsey, Plummer 2, se ne 5-29-5..	*	3318
Chase County—		
Sheedy et al, Atyeo 2, se ne ne 36-21-9	25	2122
Coffey County—		
Sheedy et al, Young 1, c sw 11-23-13	15	1848
Harper et al, Peck 1, se sw sw 16-23-14	50	1646
Cowley County—		
Roxana, Carlson 1, sw 21-30-3	90	2965
Independent, Swenson 1, nw sw se 15-32-4	¶5	2614
McNabb et al, Wallace 2, ne se nw 22-32-4	60	2355
Payne et al, Ward 1, sw se se 24-30-6	*	3405
Derby, De Bard 1, sw se ne 35-34-3	*	2056
Elk County—		
Pure, Chaffine 20, sw se 14-31-10..	30	1648
Frazier et al, Webb 4, ne nw 23-31-10	20	1650
Greenwood County—		
Empire, Edwards 5, ne nw nw 21-23-11	75	1966
Edwards 6, sw ne nw 21-23-11...	150	1955
Patterson et al, Cox 1, se ne ne 16-23-12	*	1895
Spencer et al, Bigler 1, se ne 26-23-12	*	1825
McGinnis et al, Hammond 1, sw nw 10-25-10	*	2265
Morris County—		
Nicolls et al, Hammer 1, nw se nw 14-16-7	¶2	1459
Woodson County—		
Fields, Weide 1, sw se 17-25-14...	10	1345
Lyon County—		
Kellogg Drlg. Co., Lamotoux 1, ne nw nw 26-21-10	*	2640
Marion County—		
Slick et al, Rogers 1, nw se se 20-17-1	*	....
Sheedy et al, Berry 2, nw se sw 13-21-4	*	2400
Rice County—		
Phillips, Miller 1, ne nw ne 3-21-6	*	3504
Sedgewick County—		
Johnson et al, Hanksaber 2, ne nw sw 29-29-2	*	3593
Stafford County—		
Kismet et al, Richardson 1, c sw 26-22-11	*	....
Sumner County—		
Roxana, White 1, sw ne se 9-34-2..	*	3920

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	8	10	3	7	..	1	5	2	210	457
California	13	20	13	19	..	..	..	1	7,909	6,841
Colorado	1	2	1	..	..	..	..	2	3,000	....
Indiana	3	8	2	2	..	1	1	5	30	45
Illinois	..	6	..	5	..	..	..	1	....	....
Kansas	30	23	12	14	2	..	16	9	75	1,905
Kentucky	8	23	7	19	..	2	1	2	419	775
Louisiana	19	21	7	11	4	2	8	8	4,367	7,590
Michigan	4	5	4	5	..	..	..	..	100	105
Mississippi	..	..	..	..	..	..	..	..	....	....
Montana	10	3	9	3	..	..	1	..	2,105	1,150
New York	10	9	9	9	1	..	..	..	26	49
New Mexico	..	2	..	2	..	..	..	..	....	90
Ohio	27	26	14	14	8	5	5	7	449	550
Oklahoma	97	111	52	64	11	10	34	37	34,084	30,091
Pennsylvania	58	57	53	51	4	5	1	1	147	185
Tennessee	2	..	2	..	..	..	..	..	35	....
Texas	173	155	103	94	12	13	58	48	40,537	30,452
West Virginia	28	29	10	4	12	20	6	5	117	28
Wyoming	5	8	3	7	1	1	1	..	1,175	3,205
Totals	496	518	394	330	55	60	137	128	94,785	83,518
Increase this week	..	..	..	..	..	..	9	..	11,267	....
Decrease this week	22	..	26	..	5	..	..	..	....	....

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
Carter County—		
Roxana, Pierce 1, se nw se 7-2-2..	30	2786
Atlantic, Liles 2, se nw nw 11-2-3..	140	2990
Schermerhorn et al, Calvery 2, sw se sw 2-2-3	420	3312
Humble, Jordan 10, ne sw sw 18-1-3	500	2770
Merrick et al Noble 5, ne se ne 27-2-2	*	1272
Caddo County—		
Livermore et al, Rigney 2, sw nw nw 12-5-9	30	2409
Comanche County—		
Ashcraft, et al, School 1, se 20-2-10	5	954
Danciger, Spitler 1, ne 10-2-10....	*	1702
W. Green, Cox 3, se sw nw 24-2-10	*	1926
Shaw et al, Allen 1, nw ne sw sw 24-2-10	*	2053
Creek County—		
Texas Co., Simmons 7, se nw se 3-17-9	20	3288
Turman, Pemberton 2, s e l nw nw 8-17-10	420	3044
Cumberland, Tiger 3, se ne se 13-17-10	50	1846
J. R. Cole, Strip 2, sw nw se se 13-17-10	30	2412
Pioneer, Bucktrot 12, nw ne 24-17-10	70	2488
Tibbens, Unallotted 35, nw ne ne sw 30-15-9	50	3662
Ireland, Barnett 2, ew nw ew 9-17-11	20	1634
Magnolia, Vance 2, c e l se se 6-18-7	100	2538
Texas Co., Sneed 1, ne nw se 7-14-9	*	3790
Plymouth, Traser 1, ne sw ne 10-18-11	*	2597
Garfield County—		
Roxana, Schroeder 29, se nw nw sw 18-22-3	145	3035
Sinclair, Powell 1, nw ne ne 35-9-9.	*	4045
Dively 5, ne se ne 14-32-4	*	5184
Grady County—		
Grant, Polson 2, sw nw se 27-3-5..	45	1451
Clark et al, Kerans 2, se sw ne 21-3 3-5	550	1700
Carter, Spaulding 1, sw se ne 21-3-5	690	1715
Gypsy, Kayser 3, nw ne sw 16-3-5.	90	1755
Garvin, Stacy 2, ne sw 16-3-5.....	75	1760
Little Nick, Farwell-Smith 1, sw nw 24-5-8	¶55	2267
Stogner et al, McKee 1, c s l sw sw 14-5-8	¶26	2267
Hughes County—		
Transcontinental, Ogle 9, se ne ne 4-9-9	255	3799
Roxana, Powell 1, nw ne ne 35-9-9..	*	4045
Jefferson County—		
Skelly, Ryan 1, c se se 23-6-6.....	10	2065

Company, Well and Location	Initial Production Bbls.	Depth
Kay County—		
Texas Co., Day 6, se ne 20-29-1....	815	3450
Carter, Jameson 1, ne 17-27-1.....	¶6	3484
Comar, McCullough 1, sw se 5-28-1..	¶13	1579
Carter et al, Shimp 4, ne sw 17-29-1	110	2321
Marland Robinson 1, ne se 17-27-1	40	3472
Fitzgerald 4-A, se ne 1-26-2.....1000		3644
Diller 1, nw se 12-26-2.....	71	3609
North Lease 2, No. 2, nw sw 6-26-1	70	3670
North Lease 3, No. 2, nw sw sw 6-26-1	585	3644
Skelly et al, Becker 3, se sw 28-25-1	*	4354
Texas Co., Siler 4, se sw ne 28-25-1	*	4330
Lincoln County—		
Mid-Continent, Teter 1, nw sw ne 9-14-6	25	3348
Wentz, Lukenbeal 1, sw se 34-17-2	*	4846
Okfuskee County—		
Pure, Fixico 1, nw se 14-11-10....	30	3234
Darby et al, Manwarring 1, se nw sw 16-13-10	*	3532
Okmulgee County—		
L. C. Wheeler et al, Jackson 2, s se se 33-15-12	25	2148
X. Ray, Phillips 1, se nw se 9-14-14	¶6	1964
Pine, Gray 1, c s l ne nw 13-12-13..¶3½		1847
Nicholson's Davis 1, ne nw se 13-11-13	¶1	1880
Pine et al, Hawkins 2, nw sw se sw 4-15-14	*	2432
Osage County—		
Phillips, 8, ne se se 7-27-6.....	330	3011
Osage Gas Prods, 373, nw sw 5-27-11	¶3	1845
Tidal, 23, nw se sw 34-22-10.....	20	1250
22, nw se sw 34-22-10.....	15	1952
Superior, 1, c nw 8-22-11.....	50	1685
Lillystand et al, 4 nw se se 14-21-10	5	1969
T. K. Smith, 2, se ne 5-22-12.....	¶8	1857
Sand Spring Home, 102, se sw nw 36-20-10	*	2225
Devonian, 11 sw se ne 33-22-11....	*	2136
Tidal, 7, ne 7-21-11	*	2093
Davis et al, Dodd 1, se sw sw 36-20-6	15	2782
Marland et al, Moebius 3, n se nw 33-20-5	125	3731
Payne County—		
Mulberry, Payne 1, sw nw ne 5-17-4	150	4293
Pottawatomie County—		
Sinclair, Foreman 1, se sw ne 18-9-5	50	4149
Gypsy, Earl 5, se ne nw 16-9-5....	*	....
Seminole County—		
Magnolia, Holmesly 1, sw ne se 11-9-5	4050	4286
Pure, Evans 1, nw se 10-9-6.....	¶15	3585
Texas Co., Mayhue 1, se sw ne 14-9-6	1200	4268
Mayhue 3, se ne 14-9-6.....	*	1030

"Your letter of September 15th at hand and in reply wish to state that the Franklin Oil Engine has proved to be very economical, and our drilling superintendent is certainly pleased with it. It has not only saved us money on water and oil, but uses so much less water that in case we are drilling in a locality where there is a water shortage it saves shutting down the well.

"We have prepared one or two questions below, which will be answered by our superintendent and this letter mailed to you.

Yours very truly,

Shawver and Sutter
By: Bell"

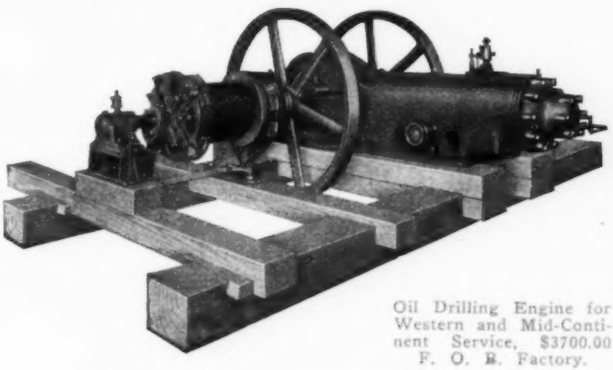
"We are drilling a deep test near Arkansas City, Kansas, with a Franklin Oil Engine. Some time ago we drilled a well in this locality with steam and the water was so bad and we were shut down nearly one-half of the time repairing the boiler, which is very expensive. This trouble is all overcome with the Oil Engine.

"There is no question in my mind but what we can make hole as fast as we can with steam.

"We just completed a well to the Wilcox Sand, drilling to a depth of 3100 feet in forty-five days, saving on an average of $20.00 per day on water and fuel oil, over what we could have done it with steam.

Yours very truly,

(Signed) D. M. Shawver
Sec't. for Shawver and Sutter"



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No More Shut-Downs for Boiler Repairs

The crew that works with a Franklin Valveless Oil Engine can go after records and bonus without being handicapped by a power plant that has to take "time out" for adjustment and repair.

These letters, like scores of others from men in the field, all tell the same story —cheaper, faster, better than steam. We couldn't say more if we wrote a **book** about the Franklin Valveless.

Write or call the nearest distributor and ask him where you can get some first-hand dope on a Franklin powered rig.

FRANKLIN VALVELESS ENGINE COMPANY
Franklin, Penna.
Oil Well Supply Company
Exclusive Distributors

FRANKLIN
VALVELESS ENGINES

Company, Well and Location	Initial Production Bbls.	Depth
Carter, Killing 6, nw se nw 23-9-6	2200	4139
Killing 8, se nw nw 23-9-6	3700	4151
Gilliland 1, ne nw ne 27-9-6	2990	4186
Turman, Jones 3, nw se ne 34-9-6	3298	4191
Jones 1, se ne 34-9-6	2700	4106
Empire, Wilson 2, se nw ne 34-9-6	3400	4050
I. T. I. O., Goforth 5, nw sw ne 15-8-6	2970	4149
Stephens County—		
Carter, Charleston 2, sw nw 32-1-5	100	1760
Garvin Drlg. Co., Massey 1, sw 30-1-8	*	2653
Tulsa County—		
Glidden, Fife 4, c n l sw se 15-19-11	200	2172
McCullough, Crosby 2-A nw ne 18-17-13	¶7	1700
Winemiller et al, Unalltoed 1, sw se 13-16-12	*	2632
Smith et al, Fife 1, nw se ne 22-19-11	*	2332
Mitchell Bros., Fife 1, sw ne se 15-19-11	*	2282
Wagoner County—		
Cornett, Seir 1, se nw 11-18-15	*	1300
Beckham County—		
Duke, McGee 3, ne se ne se 25-8-22	*	1955
Logan County—		
Zingery et al, Baker 1, nw se 5-17-1	*	5712
Marshall County—		
Magnolia, Walters 1, se ne sw 17-5-6	*	1910
Muskogee County—		
Kiskaddon, Drew 1, se ne sw 33-15-16	*	2430
Sun Ray, Roberts 1, nw sw nw 16-15-17	*	
Bradley, Thompson 1, sw 2-14-19	*	135
Wade 1, sw ne 2-14-19	*	315
Howard et al, Smith 1, ne se se 18-13-19	*	1752

MOUNTAIN STATES

WYOMING

Company, Well and Location	Initial Production Bbls.	Depth
Oregon Basin—		
Ohio Oil Co., 3S, 8-51-100,	1000	3580
La Barge—		
Cal. Pet. Co., 1, 34-27-113,	100	800
2, 3-26-113,	75	900
Texas Prod. Co., 1D, 15-26-113,	¶	585
Fremont County—		
Union Oil Co., 1C, ne 15-5-1	*	4365

COLORADO

Company, Well and Location	Initial Production Bbls.	Depth
Iles—		
Midwest, 4P, se 22-4-92	3000	3205

MONTANA

Company, Well and Location	Initial Production Bbls.	Depth
Kevin-Sunburst—		
Homestake Oil Co., 25, ne 36-35-2	900	1440
Carter Oil Co., 4, nw 11-35-2	*	1750
Cal. Pet. Co., 6, se 28-35-2	550	1460
Adams Oil Co., 4, nw 33-35-1	200	1465
Fulton Oil Co., 23, nw 31-25-1	100	1410
Ohio Oil Co., 3, se 32-35-1	50	1460
6, se 32-35-1	80	1460
Hill Oil Co., 5, se 28-35-2	100	1460
4, se 21-35-2	60	1480
Hardrock Oil Co., 5, ne 26-35-2	65	1470

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
Bradford Field—		
South Penn Oil Co. Taylor 40	3	
Jones 224	2	
Bingham 400 tr 78	2	
Bingham 154 tr 34	2	
Bingham 494 tr 60	2	
Bingham 390 tr 1	2	
Whipple 133	3	
Bingham-Satterfield 119	2	
Davis 28	2	
Forest Oil Co., Taylor 8	3	
Taylor 9	2	
Taylor 10	3	
Taylor 11	3	
Fisher 9	2	
Fisher 10	2	
Fisher 11	3	
Fisher 12	2	
Fisher 13	3	
Fisher 14	3	
G. W. Bovaird, Bingham 391 tr 86	5	
Esther Oil Co., Lawton 60	3	
Looker Oil Co., Looker 1	3	
Jane Zane Estate, Quintruple 1	3	
W. F. Sprague, Sprague 18	3	
C. M. Simon, Corwin 1	3	
A. L. Lilly & Co., Middaugh 6	3	
J. H. Gibson, Gibson 3	3	
Piper & Lloyd, Ekas 31	3	
Wilson & Patton, Wormer 1	3	
Park Estate & Co., Park 14	3	
Park 15	3	
H. D. & L. C. Brink, Bingham 468 tr 1	3	
Healy & Daly, Bingham 500 tr 36	3	
Thomas & Staley, Sullivan & Co. 1	3	
Devore & Potter, Russell 1	3	
Benson & Co., Benson 4	4	
F. M. Johnson & Son, Johnson 25	3	
Hope Oil Co., Richardson 1	3	
Venango County—		
George H. Torrey, Cox 8	3	
Cox 9	3	
Grimm & Johnson, Foster 25	2	
J. L. Eakin, Kenderell 51	2	
White & Corbett, Corbett 4	2	
Walters, Smith & Co., Porter 40	2	
Franklin Trust Co., Foster-Sutton 14	2	
A. E. Fritz, Craig 2	*	
Thompson & Rice, Osborne 6	3	
Butler County—		
Imen & Co., Myers 2	¶2	
West Penn Oil Co., McNaughton 1	2	
M. B. Finnessy, Barkley 23	2	
Berry & Robinson, Bovard 1	2	
Center-Middle Field—		
John Haddon, Lot 2 tr 22	7	
Kinzue Valley Chem. Co., Lot 40 tr 1	¶1	
J. G. Cochran, Lot 7 tr 51	4	
Clarion County—		
Madego & Co., Madigo 1	3	
Alum Rock Gas Co., Croner 2	2	
Greene County—		
Manfs L & H Co., D. K. Phillips 2	¶1¼	
Jacob King 1	¶2	

NEW YORK

Company, Well and Location	Initial Production Bbls.	Depth
Allegheny County—		
Barnes & Scott, Scott & Co., 1	7	
Crandall & Hightman, Crandall 1	3	
J. M. Hughes & Co., Hughes 1	3	
Breckenridge Oil Co., Breckenridge 1	2	
Martin Bros., Martin 1	3	
M. J. Fitzgerald, F. D. and B. 1	2	
J. C. Mindler, Lindeler 1	2	
Sepany Oil Co., Multnus 1	2	
Leland & Co., Leland 1	2	
C. W. Cole, Worden 1	¶½	

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
Lewis County—		
Guy Zinn & Co., Cunningham 1	¶¼	
Pleasants County—		
Faith Oil & Gas Co., Hammett Hrs 5	7	
G. Pickens & Co., W. Hammitt 5	10	
Roane County—		
United Fuel Gas Co., Asbury Lewis 3	¶½	
J. G. Keffer 1	¶2	
N. Beattie, Saler & Smith Hrs 1	*	
Okey Bennett & Co., Shock 3	¶1½	
King Oil & Gas Co., White 1	*	
Godfrey L. Cabot, A. J. Runnion 1	¶2	
Ritchie County—		
Southern Oil Co., A. E. Ryan 8	5	
Hope Const & Refg Co., Lewis 1	¶1½	
J. A. Glass & Co., Miller Hrs 1	*	
Victory Oil Co., Goodwin 1	*	
Clay County—		
Virginian G & O Co., Lockhart 9	15	
Brown Swan & Co. 1	25	
South Penn Oil Co., Stockley 16	15	
Harrison County—		
Clarksburg L & H Co., Gore 251	¶2	
South Penn Oil Co., Fletcher 1	15	
Wetzel County—		
Cleveland-Cameron Gas Co. Lennon 1	10	
Orndoff & Co., Otho 1	¶2	
Mingo County—		
Public Gas Corp., Closterman 16	15	
Calhoun County—		
C. B. Lewis & Co., Kelley 1	¶1½	
Hope Natural Gas Co., Bell 1	*	
Marion County—		
S. N. Elliott, Metz 2	¶2	
Marshall County—		
Hope Const & Refg Co., Evans 1	¶2	
Monongalia County—		
Swastika O & G, Wright 1	¶4	
Jackson County—		
Edgar Boehm, Thomas Buch 1	*	

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
Ohio County—		
James C. Ellis, Weller 8	125	621
Ohio Oil Co., Taylor 2	125	729
Rex-Pyramid Oil Co., Ambrose 4	100	621
Chicago Pet Synd, Nannie Brown 6	2	
Warren County—		
Wood Oil Co., Davenport 30	10	455
Julian & Johnson, Jenkins 11	12	461
J. S. Bright, Atty, Jenkins 2, tr 4	*	
Lee-Owsley Counties—		
Thomas Foreman Co., Foreman 4	10	

TENNESSEE

Company, Well and Location	Initial Production Bbls.	Depth
Clay County—		
Dixie Oil Co., Langford 1	25	563
H. Z. Clark Oil Co., Stone 1	10	561

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
Licking County—		
J. I. Robinson, O. B. Lees 1	¶¼	
Wiggins & Co., McKee 1	*	
Stoffer & Co., Chaney 9	20	
Moore & Adams, P. & M. Wolfe 7	5	
Poulton Bros & Co., Fink 1	5	
Guernsey County—		
W. MacSmith & Co., Slabine 2	180	
Pure Oil Co., F. Gillman 1	40	
Holmes County—		
Empire G & F Co., Nethrow 4	88	
East Ohio G Co., Middaugh s 18 tr 2	¶2½	
Meigs County—		
H. B. Goddard & Co., Brewer 1	5	
Pure Oil Co., Young 1	¶½	
Medina County—		
E. R. Edson & Son Co., Packard 30	2	350
Wertz 3	*	358
Athens County—		
Logan Gas Co., Barnhill 4	¶¼	
Fairfield Gas Co., Varner 3	¶¼	
Hocking County—		
Gordon Oil Co., Kitchen 1	37	
Ashland County—		
East Ohio Gas Co., Miller 1	¶½	
Knox County—		
Bell Bros & Davidson, Larson 7	*	
Coshocton County—		
Pure & Eastern Ohio Oil Co., Humphries 1	*	

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
Auglaize County—		
Brookside O & G Co., Kucherman 3	10	1245
H. Kuck 1	*	1250
Hardin County—		
H. E. Schmidt, Hites 4	25	1490
Hancock County—		
B. Porter & Co., Deeds 19	15	1385
Wood County—		
Ray Oil Co., Roller 3	12	1246
Sandusky County—		
M. J. Beaty, Heyman 14	5	1350
Logan County—		
Forest O & G Co., Patterson 1	¶¼	
Ottawa County—		
Oak Harbor Nat Gas Co., Vogel 1	¶¼	1365

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
Pike County—		
C. E. Noble & Co., Morrison 1	8	1175
B. Wadson & Co., Wiley 1	*	1426
Daviess County—		
Bell Bros. & Co., Pat Nolan 1	22	

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
Saginaw County—		
Fordney Pet. Co., Gardner 1	40	1828
Saginaw Prosp. Co., Rechter 2	20	1839
Schaiberger & Co., Schaiberger 1	20	1840
Fordney Pet. Co., Flack 1	20	1825

LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
Bossier Parish—		
Bethany O. & G. Co., Dodson 1, 16-23-12	¶25-10	3091
Caddo Parish—		
Magnolia, Leson-Thigpen 17, 6-20-15	7	1620
Texas, Herndon 5, 14-21-15	¶40	3590
La Salle Parish—		
Ayers Bros et al, Tremont 4, 30-10-2e	1000	1533
Morehouse Parish—		
Ouachita Nat. Gas Co., Allison 8, 7-20-5e	¶2½	2221
Easterling et al, Sicard 1, 18-18-4e	¶1½	2243
Union Parish—		
United Carbon Co., Rabun 1, 28-21-4e	¶10	2140

(Continued on page 94)

LUFKIN
COVERS THE OIL FIELD

Timken Bearings Are Used In Lufkin Equipment

Wewoka 17 Hull 17 Russia 15
Davenport 14
Morris 6 Sour Lake 6

Manufactured at Lufkin, Texas, by

THE LUFKIN FOUNDRY AND MACHINE CO.
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The oil field man who wants oil well supplies of merit and wants them promptly is the one that can appreciate Norvell-Wilder supplies and service.

Complete stocks and well located distributing centers enable us to give you what you want and when you want it.

Write, phone or wire your needs

NORVELL WILDER
Hardware Company

BEAUMONT HOUSTON SHREVEPORT FT. WORTH

Say you saw it in The OIL WEEKLY

The Oil Thief
EVAPORATION
LEAVES THE PROTECTED "OIL BANK" UNMOLESTED!

Liquid Safety Valves are so designed as to operate at an accumulation of ½ ounce of vacuum or pressure. When such an amount of vacuum or pressure has been set up, two cups immediately relieve the abnormal condition of the tank.

Their action is positive and automatic. Liquid Safety Valves, while eliminating Evaporation, also eliminate all losses from mechanical carrying power of wind which might cross an opening on the tank from any direction. They do this by allowing the tank to be kept airtight, with safety.

Stealing silently upon **unprotected** tanks like a thief in the night, Evaporation takes its toll in millions of dollars annually.

But evaporation passes by the tank that has been equipped with LIQUID SEATED SAFETY VALVES, the lowest priced, yet most highly efficient, tank equipment ever produced. There are reasons why evaporation respects the judgment of the operator who protects his tanks with this modern equipment, chief among them being:

1. **100 PER CENT PROTECTION**
2. **100 PER CENT SAFETY**
3. **99 44-100 PER CENT CONSERVATION**

An inquiry addressed to any of the Westcott & Greis Offices listed below will bring full information and prices on LIQUID SEATED SAFETY VALVES. Write to the nearest address today, and learn why more LIQUID SEATED SAFETY VALVES are sold in the Mid-Continent fields today, than any other.

WESTCOTT & GREIS, Inc.

Dallas **TULSA** **Los Angeles**

WESTCOTT & GREIS
CONSERVATION AND SAFETY

Say you saw it in The OIL WEEKLY

OVER 3,000,000 FEET OF HEATREAT RODS IN SERVICE

ONE CENT MORE PER FOOT FOR 100% MORE SERVICE

HeatreaT

Concerning A. P. I. Specifications and Physical Properties

The adoption by the American Petroleum Institute of a standard A. P. I. thread and standard specifications for sucker rods is the result of over a year's intensive study of rod design and usage by the best engineers connected with the petroleum industry. Their selection is based upon strength, durability, perfect and easy shouldering and correct manufacturing practice.

It is but natural that we are elated over the fact that D+B rods are so nearly identical in every way with the specifications adopted by the A. P. I. after their intensive research. The comparative specifications show that the A. P. I. and D+B regular specifications are practically identical. The only variations are a recessed coupling and a 5% difference in the angle of the threads.

COMPARATIVE SPECIFICATIONS

	5/8"		3/4"		7/8"	
	A. P. I.	D & B	A. P. I.	D & B	A .P. I.	D & B
O. D. of Pin....	15/16"	15/16"	1 1/16"	1 1/16"	1 3/16"	1 3/16"
Length of Pin ...1	1/8 "	1 1/8 "	1 3/8 "	1 3/8 "	1 3/8 "	1 3/8 "
Threads Per Inch.	10	10	10	10	10	10
Width of Wrench Square	1 "	1 3/16"	1 "	1 "	1 "	1 "
O. D. of Coupling.1	1/2 "	1 1/2 "	1 5/8 "	1 5/8 "	1 13/16"	1 3/4 "
Length of Coupling	4 "	4 "	4 "	4 "	4 "	4 "
O. D. of Shoulder for Elevator ...1	1/4 "	1 1/4 "	1 3/8 "	1 3/8 "	1 1/2 "	1 1/2 "

Heat treating raises the fatigue range of any steel, at the same time decreasing the grain size and dissolving the molecular overgrowth. The table below gives the exact figures, based on 8-in. gauge length which is the commercial standard instead of on 2-in. length, which would tend to give a false value by increasing the percentage of elongation.

COMPARATIVE PHYSICAL PROPERTIES

	Ordinary Steel	D & B Heat Res't. Steel
Elastic Limit	55,000 lbs.	86,000 lbs.
Tensile Strength	90,000 lbs.	118,000 lbs.
Elongation	25%	22%
Reduction in Area	42%	45%
Fatigue Value	42,000 lbs.	59,000 lbs.

It is probable that operators now will specify A. P. I. threads for all new strings. Until A. P. I. thread rods have been universally adopted, however, we will continue to manufacture the type of thread requested by users.

D&B PUMP and SUPPLY Co.

LOS ANGELES, CALIF. DALLAS, TEXAS.

BRANCH STORES

TORRANCE, TAFT, COALINGA, BAKERSFIELD, SIGNAL HILL, HUNTINGTON BEACH & SANTA FE SPRINGS, CALIFORNIA

PERMITS GRANTED FOR NEW WELLS

TEXAS

Archer County—P. F. Gwynn et al, Wichita Falls, Christian 1, 1593, TE&L sur, 150 ft to s and w lines. Staley, Wynne & Co., Wichita Falls, Farmer 1, B. C. S. L. sur, 150 ft to s and e lines. Simms Oil Co., Dallas, Turbeville A 20, blk 172, 300 ft n of 19. Everts, Hazlitt & Simmons, City Natl. Bank Bldg., Wichita Falls, T. B. Wilson 4, S 12, H&TC sur, 20 ft to w and 567 ft to s line. Staley, Wynne & Co., Wichita Falls, Turbeville 2, blk 46, R. Carson sur, 300 ft s of 1; 3, 300 ft w of 1.

Atascosa County — Grayburg Oil Co., San Antonio, Caruthers 28, No. 377, G. W. Cooper sur, 800 ft e of 29; 29, 1000 ft e of 26.

Austin County—J. J. Kane, 2718 Ave. C, Galveston, C. F. Knolle 1, S Austin sur, 1000 ft to n and 2000 ft to w line.

Brown County—J. B. Alford, Dallas, Forbes 1, Deadrick & Riddle sur, center. States Oil Corp., Eastland, Wooldridge 21, S 157, E. T. Ry. sur, 225 ft to n and 150 ft to e line. E. M. Curry et al, Cross Cut, Kilgore 3, H. McClure sur, 175 ft to n and w lines. Lee Hart, Brownwood, J. E. Hill 3, Wm. Hays sur, sw corner. Corzelius & Blackstone Oil Co., Box 998, Eastland Marr 1, blk 62, N. P. Tuggle sur, 652 ft to e and 664 ft to s line. Tower & McKanna, City Natl. Bank Bldg., Wichita Falls, J. W. Shore 3, No. 625 C. Betts sur, 100 ft to n and 150 ft to w line 5, 586 ft to n and 150 ft to e line; 6, 300 ft s of 2; 7, 300 ft s of 3. Texas Co., Cisco, F. Lowe 42, No. 622 Stubblefield sur, sw corner. L. J. Ward, Box 685, Brownwood, Byler 1, No. 43 T&NO sur, 940 ft to n and 2725 ft to w line. M. E. Atchison, Winchell, Dixon 2, M. Osburn sur, 400 ft to n and 600 ft to e line. Texas Co., Cisco, Byler 1, S 43, T&NO sur, 150 ft to s and w lines. E. R. Wilson et al, Cross Plains, J. P. Newton 4, P. Curlong sur, 150 ft to n and w lines. Forest Oil Corp., F. & M. Bank Bldg., Fort Worth, Davis 1, S 4, cent. A. J. Posey, Fort Worth Natl. Bank Bldg., Fort Worth, R. W. Boler 1, No. 25, M. Cherry sur, 150 ft to s and w lines. J. K. Hughes Dev. Co., Mexia, Shore 14, J. C. Ryan sur, 280 ft e of 10.

Bexar County — N. A. Saigh, Builders' Exchange Bldg., San Antonio, Frees 2, No. 49 S. McCulloch sur, 150 ft to w and 750 ft to s line.

Brooks County—Texas Co., Houston, Lassater 1, No. 329 P. Benavides sur, 1250 ft to n and 1100 ft to e line.

Callahan County—W. H. Kirby, Moran, Yarborugh 2, 2290 TE&L sur, 300 ft sw of 1. Murchison Oil Co., Wichita Falls, McDermitt 2, V. C. S. L. sur, 1724 ft to e and 1273 ft to n line. Geo. Parker, Tulsa, Okla., McDermitt 1, S 184, W. Helms sur, 822 ft to e and 1229 ft to s line, Humble, Cisco, A. Hickman 2, S 1, I&GN sur, 150 ft to e and 1711 ft to s line. Winfrey & Dugan, Flatiron Bldg., Fort Worth, Texas. W. I. Ghormley 1, J. J. Hendricks sur, 600 ft to w and 150 ft to s line. Shirley, Dowell & Hyer, Cisco, L. Terrill 1, No. 336 sur, V. C. S. L. sur, 150 ft to n and e lines. Murchison Oil Co., Wichita Falls, McDermitt 1, V. C. S. L. sur, 1724 ft to e and 1273 ft to n line. Geo. Parker, Tulsa, Okla., McDermitt 1, S 184, W. Helms sur, 822 ft to e and 1229 ft to s line. Humble, Cisco, Hickman 2, S 1 I&GN sur, 150 ft to e and 1711 ft to s line. Winfrey & Dugan, Flatiron Bldg., Fort Worth, Ghormley 1, J. J. Hendricks sur, 600 ft to w and 150 ft to s line. Shirley, Dowell & Hyer, Cisco, Terrill 1, No. 336 V. C. S. L. sur, 150 ft to n and e lines. W. R. Andrews et al, Putnam, Hutchinson 1, No. 306, S. P. Ry., 150 ft to e and 1170 ft to n line. A. L. Derby, Wichita, Kans. Isenhour 1, blk 4, GC&SF sur, 150 ft to n and 1000 ft to w line. Godley O. & G. Co., Dallas, Buchanan 21, blk 8, Bayland Asy. sur, 1350 ft to w and 750 ft to n line. Cisco Oil Co., Box 1056, Cisco, G. C. Woods 28, 2299 TE&L sur, 450 ft to w and 430 ft to n line. J. H. West, Box 1106, Cisco, R. D. Williams 2, 2269, TE&L sur, se corner. C. E. Starr, Baird, Gilliland 1, S 124, BBB&C sur, 200 ft to s and w lines. C. B. Cook, Fort Worth Natl. Bank Bldg., Fort Worth, Hill & McCoy 1, J. P. Collins sur, 300 ft to s and e lines.

Coleman County—Amerada Petroleum Corp., Cisco, Harris 128, S 14, J. Sanders sur, 2160 ft e of 127; Harris 4, J. Sanders sur, 2200 ft se of 2. T. B. Slick, Cross Plains, Goodwin 1, W. T. Dunlavy sur, 1050 ft to w and 1650 ft to n line. Prairie O. & G. Co., Ranger, Neeb 3, S 33, C. C. S. L. sur, 150 ft to n and w lines. D. W. Daugherty, Coleman, Grounds 1, S 5, T&NO sur, 300 ft to s and 500 ft to e line. Barker, Hodges & Lewis, Brownwood, Firiash 2, No. 78, Bonds & Sanders sur, 150 ft to n and 750 ft to w line. G. W. Stringfellow, Coleman, Burk 1, blk 655, A. Williams sur, 1980 ft to n and w lines. L. H. Wentz, Box 1002, Eastland, Shore 13, S 625, C Betts sur, 396 ft s of 1; 14, 300 ft s of 10. S. Smiertner & Son, Wilcox, Ariz., A. Hanke 1, S 8, V. C. S. L. sur, 750 ft to w and 150 ft to s line; 2, 300 ft e of 1. T. G. Shaw, Box 753, Fort Worth, Jopling 1, C. B. Bogg sur, No. 599, 150 ft w of center of se line. C. B. Cook, Fort Worth Natl. Bank Bldg., Fort Worth, Baugh 1, S. Stewart sur, 310 ft to w and 300 ft to s line.

Cooke County—American Ref. Co., Wichita Falls, J. A. Dennis 14, T. J. Moss sur, 300 ft s of 12. Stroube & Stroube, Corsicana, Koelzer 3, S 1, blk 13, T. Scott sur, 432 ft to w and 150 ft to s line. Hedrick-Camp Drlg. Co., Harvey-Snider Bldg., Wichita Falls, Kleiss 4, blk 60, Littleton sur, 450 ft to n and 150 ft to w line. Shasta Oil Co., Wichita Falls, E. L. Hair 1, J. Gregg sur, center.

Caldwell County—Sun Oil Co., Beaumont, E. H. Talley 1, W. C. Swearingen sur, 650 ft nw and 1675 ft to se line. J. B. Martindale 1, J. D. Dial sur, 1643 ft to n and 3988 ft to w line.

Clay County — Lone Star Gas Co., Dallas, Miller 15, blk 71, P. C. S. L. sur, 500 ft to n and 200 ft to w line. E. J. Stump & Co., Wichita Falls, Boddy 2, blk 47, H. B. Eustis sur, 570 ft to nw and 150 ft to ne line.

Comanche County—Wm. T. Amis, Cisco, T. Zellars 1, Percifield sur, nw corner.

Crane County—Humble, Cisco, University 9, S 38, blk 30, Univer. Lands, 660 ft nw of 6. Church, Weekly & Fields, Box 967, Midland, Davis 2, S 39, blk 30, Univ. Lands, sw corner.

Duval County—Barkley, Meadows & Morgan, Hebbronville, King-Harper 3, S 323, 150 ft to n and 175 ft to e line; Benavides 1, S 10, blk 5, 307 ft to se and 590 ft to sw line. Houston Oil Co., Houston, Benavides 2, M. Arispe sur, 694 ft to n and w lines.

Eastland County — Louisiana Oil & Ref. Corp., Shreveport, Sneed 1, S 30, McL.C.S.L. sur, 440 ft to s and 150 ft to w line. C. A. Griesedieck, Cisco, Parsons 1, S 16, blk 2, H&TC sur, 150 ft to n and w lines. States Oil Corp., Eastland, Sibley 1, Wm Van Norman sur, 180 ft to n and 212 ft to e line Robert Oil Corp. & Pettit & Adkisson, Box 725, Breckenridge, A. J. Elliott 1, S. J. Robinson sur, 950 ft to n and 1200 ft to w line.

Fisher County—Roeser & Pendleton, Fort Worth, Wheeler 1, blk 221 Creath sur.

Glasscock County — Penn & Julian Pet. Corp., American Exchange Natl. Bank Bldg., Dallas, Edwards 1, S 11, blk 34, T&P sur, center.

Hardin County—Ada Belle Oil Co., Batson, Texas Co. 115, J. Knight sur, 100 ft to e and 53 ft to s line. S. R. Buchana, Batson, Milholme 93, J. Milholme sur, blk 10, 830 ft w of center of e line. H. E. Grove, Keith Bldg., Beaumont, Collen 1, Cotton sur, se corner.

Hutchinson County — Phillips Petroleum Co., Bartlesville, Okla., Whittenburg 10, S 71, blk 46, H&TC sur, 655 ft no of 9. Kelly Petroleum Co., Hillstreet Bldg., Los Angeles, Calif., Johnson 1, S 22, blk Y, A&B sur, 290 ft to n and 265 ft to w line.

Howard County — Pure Oil Co., Mexia, Chalk 3, blk 29, W&NW sur, 400 ft n of 2. Lockhart & Co., Colorado, Chalk 3A, S 95, blk 29, W&NW sur, 1447 ft to w and 250 ft to s line.

Henderson County — Cranfill & Reynolds, Cisco, B. E. Purifoy 1, W. K. Newell sur.

Haskell County—Subbie Oil Interest, N. P. Anderson Bldg., Fort Worth, Jeter 1, S 53, blk 1, H&TC sur, center.

Jefferson County—Yount-Lee Oil Co., Beaumont, Gladys 27, N 96, J. A. Veatch sur, 81 ft to n and 55 ft to w line. Houston Oil Co., Houston, W. Fitzhugh 2, S. Eaton sur, 500 ft w of 1. Stella Oil Co., Park & Austin Sts., Beaumont, Hogg-Swayne 22, blk 33, 290 ft to n and 40 ft to e line. Sun Oil Co., Beaumont, McLean 12, J. Douthitt sur, 50 ft to n and w lines.

Jim Hogg County—E. St. Albans, Laredo, Lopez 7, Share No. 1, blk 7, Las Animas sur, 350 ft ne of 6; 8, 350 ft ne of 7.

Knox County—Deep Rock Oil Co., W. T. Waggoner Bldg., Fort Worth, Big 4 Ranch 1, S 31, blk 4, D&W sur, 1270 ft to n and 2990 ft to e line.

Limestone County — C. F. Lytle, Mexia, Thompson 3, P. Varela sur, 145 ft w of 1; Stubenrauch 2, P. Varela sur, 200 ft n of 1.

Liberty County—Dayton Oil Co., Box 267, Dayton, Jones 2, S 125, H&TC sur, 200 ft to n and 625 ft to w line.

Loving County—Owen & Sloan, Colorado, Johnson 1, S 20, blk 53, twp 2, center.

Live Oak County—Houston Oil Co., Houston, Sellers 3, J. Muellin sur, 700 ft s of center of n line. Chicago Oil & Land Co., Rockdale, J. T. Gambill 5, D. A. Thompsn sur, 350 ft e of 1; 6, 150 ft to n and w lines. A. J. Eisenmayer, Taylor, Hamilton Est. 1, M. Dovilla sur, 1200 ft to e and 180 ft to s line.

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week Ending April 15	Previous Week	Total This Month	Total This Year	This Week Last Year	This Month 1926	Total Same Date 1926	Year Total 1926
Arkansas	5	6	21	138	26	72	421	910
California	44	41	109	486	9	97	628	1,273
Louisiana	13	7	40	167	25	88	390	1,318
Kansas	10	9	37	402	36	99	670	1,745
Oklahoma	94	51	185	1,383	115	365	1,804	5,165
Texas	155	196	518	3,499	173	722	3,661	12,158
Mountain States	19	17	53	222	....	....	....	....
Totals	340	327	963	6,294	405	1,364	7,695	*22,599

*Does not include Mountain States.

Smith, McIntosh & Thomas, Cameron, Branch 20, T. J. Chambers sur, south of 19.

Montague County—Lesh, McCall et al, Nocona, Rolls 14, J. Chambliss sur, 150 ft to n and w lines. Davis & Sanfair, Nocona, Molsbe 1, T. Dean sur, 550 ft to e and 150 ft to s line. Texas Co., Wichita Falls, Howard 3, J. Chambliss sur, 333 ft w of 2.

Medina County—Temeco Oil & Gas Co., El Dorado, Kans., Chandler 1, No. 461, C. Decker sur, 391 to n and 801 ft to w line.

Navarro County—Cranfill & Reynolds, Box 607, Cisco, Melton 1, E. Madcock sur, 150 ft to n and w lines.

Palo Pinto County—Strawn Petroleum Co., Strawn, Stewart 23, S 70, blk 4, T&P sur, 4450 ft to n and 640 ft to e line.

Shackleford County — Republic Production Co., Petroleum Bldg., Houston, Meyer 3, S 1, GH&H sur, 300 ft w of 1. Dull & Earle, Box 656, Albany, King 1, 569, TE&L sur, 600 ft to w and 950 ft to s line. Roeser & Pendleton, Fort Worth, Cook A49, S 60, E. T. Ry. sur, 1194 ft to s and 150 ft to w line; A50, 870 ft to s and 150 ft to e line; F6, 150 ft to n and 1050 ft to w line; F7, 150 ft to s and 1050 ft to e line; C19, 515 ft to s and 150 ft to w line. Milham Corp., Travis Bldg., San Antonio, Moore Est. TA, 1561, TE&L sur, 450 ft to n and e lines. Gilliam & Logan, Fort Worth, Burns 1, S 19, Bayland Asy. 200 ft to w and 500 ft to s line; Edgar 1, S 20, Bayland Asy. sur. Dull & Earle, Box 656, Albany, Pindexter 1, S 32, Blind Asy. sur, 150 ft n of center of s line. Evans & Wilson, Abilene, Lazarus 1, S 77, blk 13, T&P sur, 1320 ft to n and 660 ft to e line. L. B. Tannehill, Albany, Mathews 6, S 58, E. T. Ry sur, 400 ft ne of 2. Albany Oil Co. & Hope Oil & Gas Co., Box 451, Breckenridge, Reynolds 3, S 24, blk 11, T&P sur, 450 ft to n and 150 ft to w line.

Stephens County — W. R. Andrews et al, Breckenridge, Faubrough 181 1, S 16 blk 6 T&P sur, 640 ft to w and 346 ft to s line. Texas Fidelity Oil Corp., Fort Worth Natl. Bank Bldg., Fort Worth, Pratt 9, S 69, blk 6, T&P sur, 600 ft n of 1.

Schleicher County — T. H. Gray, F. & M. Bank Bldg., Fort Worth, Robinson 1, S 25, blk M, GH&SA sur, center.

Throckmorton County—D. W. Moore, Natl. Bank of Commerce, Tulsa, Mathews 2, 480, TE&L sur, 500 ft to n and 930 ft to w line. Geo. Parker, Tulsa, Okla., Mathews 1, S2, J. A. Mathews sur, 660 ft to s and e lines. Humble Oil & Ref. Co., Wichita Falls, Graham 3, S 992, TE&L sur, 490 ft n of 2.

Upton County — Gulf Production Co., Fort Worth, Crier-McElroy 6, S 196, blk F, CCSD&RGNG sur, 660 ft to n and 1900 ft to e line; Crier-McElroy 4, S 198, 660 ft to n and w lines.

Wichita County—Continental Oil Co. & Tedford Bros., Wichita Falls, Burnsides 5, J. M. Sharp sur, 500 ft to n and 150 ft to w line. Bridwell & Heydrick Oil Co., Wichita Falls, Frankl 1, blk 328, Wag. Col sur, 150 ft to n and w lines. Petroleum Prod. Co., Wichita Falls, Chilson 1, blk 7, D. C. S. L. sur, 150 ft s of center of n line. J. L. Swanner, Box 768, Wichita Falls, Williams-Parker 8, blk 3, J. McCool sur, 300 ft e of 7. T. K. Manley, Staley Bldg., Wichita Falls, Geyer 2, C. T. Ry No. 2 sur, 300 ft s and 300 ft e of 1. T. M. Conrey, 2001 Monroe St., Wichita Falls, Martin 1, H. Hastie sur, 1050 ft to e and 450 ft to s line. Electra-Gulf Oil Co., Electra, Watkins 7, blk 46, W. V. F. L. sur, 450 ft to n and 750 ft to e line. White & Duncan et al, Box 211, Wichita Falls, T. Goetze 1, No. 2, SA&MG sur, 450 ft to w and 150 ft to s line. Murchison Oil Co., Wichita Falls, J. & J. Waggoner 1, blk 33, H. George sur, 150 ft to n and E lines.

Winkler County — Gulf Prod. Co., Fort Worth, Hendrick 2, S 34, blk 35, School sur, 660 ft e of 1; 3, 660 ft s of 1 4, 330 ft to s and w lines; 5, 1650 ft to w and 330 ft to s line.

Wilbarger County—Fain-McGaha Oil Corp., Waggoner Bldg., Wichita Falls, Fluhman 10, Wm. McKinney sur, 300 ft n of s line. Murchison Oil Co., Wichita Falls, Waggoner 1, S 52, blk 4, H&TC sur, sw corner. Phillips Pet. Co., Bartlesville, Okla., Waggoner D17a S 42, blk 4, H&TC sur, 220 ft to n and 195 ft to e line.

Wheeler County—Lone Star Gas Co., Dallas, Stucky 1, S 92, blk 17, H&GN sur, 330 ft to n and w lines.

Wharton County—F. E. Wallace, Houston, J. Kostelnik 3, S. F. Austin sur, 600 ft to sw and 475 ft to se line; 4, 740 ft to s and w lines. H. B. Weatherly, Houston, Kostelnik 1, S. F. Austin sur, 50 ft to s and w lines.

Webb County—Houston Oil Co., Houston, Barnsley 1, S 268, blk 14, 475 ft n of s line.

Young County — Perry, Moran & Woody, Wichita Falls, Stewart 4, D. Dawson sur, 1050 ft to n and 150 ft to e line.

CALIFORNIA

Belridge—Carneros Oil Co., 45, 30-28-21.

Fresno County—Potter & Esplin, 1, 6-16-14.

Huntington Beach—John J. Mullin, Nevada 3, 10-6-11.

Inglewood—Standard, Stocker 11, 16-2-14.

Kern River—C. C. M. O. Co., 4, 23-28-27. Geo. F. Getty, Tegeler 19, 22-28-27; Tegler 22, 22-28-27.

Long Beach—Shell, Cresson Comm. 8, 19-4-12; Cresson Comm. 10, 19-4-12; Cresson Comm. 11, 19-4-12. Calif. Pet. Corp., Davidson 6, 19-4-12.

Los Angeles County—R. W. & George H. Jackson, Jackson-Leuzinger 1, 8-3-14.

Midway—C. C. M. O. Co., 37, 22-31-22. Standard, 232, 7-32-24.

Mt. Poso—Shell, Vedder-Rali 3, 9-27-28.

Richfield—Standard, L. Vejar 1, 34-3-9. Cal. Pet. Corp., Bradford 6, 32-3-9.

Seal Beach — Coastal Oil Co., 3, 3-5-12. Union Drlg. & Pet. Co., Burge 1, 3-5-12. John H. Peacock, Trustee, 1, 3-5-12. Fleet Pet. Corp., 11, 3-5-12. Pet. Securities Co., Naples 6, 3-5-12; Naples 7, 3-5-12. Bryant 1, 3-5-12; Bryant 2, 3-5-12; Bryant 3, 3-5-12; Kellas 1, 3-5-12; Marquis 1, 3-5-12; Parr-Person 1, 3-5-12 Parr-Person 2, 3-5-12. Pet. Securities Co., Dexter 1, 3-5-12; Murphy 1, 3-5-12; Murphy 2, 3-5-12.

Santa Barbara County—Miley Oil Co., Goleta 4, 3-4-29.

Summerland—Smith & Barmore, 5, —, 4-26; 6, —, 4-26; 7, —,4-26; 8, —, 4-26; 9, —, 4-26; 10, —,4-26.

Sunset—M. H. Whittier Co., 9, 1-11-24.

Temblor—Max L. Pray, 8, 1-29-20.

Tulare County—A. Otis Birch, Baker 1, 13-21-26.

Ventura—Associated Oil Co., Hartman 10, 22-3-23.

LOUISIANA

Bossier Parish—W. R. Ramsey, Oklahoma City, Dodson Est. 1, 16-23n-12w, 330 ft s and 330 ft w of ne of se of se. Sligo Syndicate, Sligo, Jeter 1, 23-17n-12w, 660 ft s and 330 ft w of ne cor.

Caddo Parish—W. W. Dobson et al, Miami, Okla., Rives 5, 5-20n-16w, 660 ft s and 660 ft w of ne cor. Ohio Oil Co., Shreveport, E. K. Smith 25, 12-21n-15w, 383 ft n and 1226 ft w se cor. Standard of La., Shreveport, W. P. Stiles 184, 33-21n-16w, 130 ft n and 125 ft w of se of ne of ne.

Calcasieu Parish—Vacuum Oil Co., Houston, Farquhar A-2, 9-10s-9w, 175 ft s and 635 ft w of ne nw sw.

Claiborne Parish — Triangle Drilling Co., Shreveport, W. J. Byrd 1, 17-19n-5w, 330 ft s and 330 ft w of ne of nw.

De Soto Parish — Texas Co., Shreveport, Sample C-15, 36-13n-12w, 280 ft n and 260 ft w of se of ne.

La Salle Parish—Louisiana Oil Ref. Corp., Shreveport, Tremont Lbr. B-37, 25-10n-1e, 375 ft s and 146 ft w ne se ne. Yeary & Bristol, Urania, Urania Lbr. 5, 8-10n-2e, 250 ft n and 50 ft e sw ne sw.

Morehouse Parish—Falcon Drilling Co., Inc., Shreveport, E. L. Gladney 1, 5-21n-7e, 200 ft s and 200 ft e of nw se sw.

Sabine Parish—Woodley Pet. Co., Shreveport, Robinson 1, 33-10n-12w, 330 ft from n and 300 ft from w line of fractional se of ne of sec.

Winn Parish—Humble, Houston, L. & A. Oil 21-A, 28-10n-2w, 150 ft n and 150 ft e from c.

OKLAHOMA

Caddo County—Ray et al, Townlot 1, nw se 3-5-9.

Carter County—Magnolia, Hardin 3, se 18-1-3; Hefner 1, ne sw 33-1-2; Schnernerhorn et al, Calvery 3, nw se sw 2-2-3; Lyles 1, nw se nw 11-2-3. Morris 1, se ne 21-2-3; Lohman 1, se sw se 23-2-3.

Creek County—Shaffer et al, Bruner 1, c e l se 17-17-8 T. E. Mann, Harjo 1, se sw nw 6-18-10. Wilson et al, Sketer 1, se sw 29-17-10. Skelly, Yellowhead 1, se sw nw 32-17-10. J. R. Cole, Sparks 3, c w l nw sw 18-17-11. Devonian, Fulson 4, c s l se ne 5-16-11. C. G. Tibbens, Lane 1, nw 29-15-9.

Grady County—Magnolia, Thomas 1, sw nw se 24-5-8. Remington, Fulton 1, sw ne ne 13-9-5. Prairie, Russel 3, nw sw ne 13-9-5. Russell 4, ne nw 21-3-5.

Hughes County—S. J. McGee et al, Riley 1, nw se 9-8-10.

Kay County—Blackwell, Nix 11, c n½ se 18-28-1. Marland, Gaylor 1, ne sw 19-27-1. Hag, Buessing 3, c n l s½ n½ ne 20-27-1. Comar, Garrett 1, ne nw se 31-27-2. National et al, Glasgow 1, sw nw 6-26-1; Marland, Rupe 1, sw nw 10-25-2.

Lincoln County—T. B. Slick, Nortan 2, nw sw ne 7-14-4.

Logan County—Bu-Vi-Bar, Kirkpatrick 1, c sw 12-15-1.

Muskogee County—C. M. Bradley, Goodrich 4, sw nw sw 5-14-9. Sommerville, Lewis 2, se ne nw ne 17-15-17.

Okfuskee County—E. L. Robinson, Berryhill 1, ne sw 35-11-9. Barnsdall, Self 1, sw se ne 21-13-9.

Oklahoma County—Cromwell et al, Walgren 1, c se 21-41-3; Stone 1, c sw 28-12-4.

Okmulgee County—Prairie, Lewis 2, sw ne 25-13-11. Misner et al, Francis 10, c sw nw 11-15-14. Carr, Ware 1, sw ne sw 9-15-14. Simon, Key 1, se ne ne 14-12-12. Powell, Thomas 3, c n l sw se 23-14-14. Hazlett et al, Fields 2, nw ne 33-13-13.

Osage County—Graham et al 1, se ne se 5-20-10. Wright et al 1, sw 5-21-9. Mid-Kansas 1, ne se 18-24-6. I. T. I. O., 364, sw ne sese 20-23-10. Phillips, 8 ne se sw 20-26-6. Skelly, 1, se sw 27-27-6; 2, sw se sw 27-27-6; 3, se sw sw 27-27-6; 4, sw 27-27-6; 5, nw sw sw 27-27-6; 6, sw nw sw 27-27-6; 7, nw sw 27-27-6.

Pottawatomie County—Mid-Continent, Doyle 1, sw se sw 19-7-4. Mid-Continent, Doyle 2, sw sw sw 19-7-4. Pure, Doyle 1, ne nw nw 30-7-4. Prairie, Bledsoe 1, ne 25-7-3. Phillips, Wilson 1, ne se se 24-7-3.

Seminole County—Gypsy, Sewell 1, ne nw 22-8-8. Slick, Fox 2, ne nw se 16-8-6. Minnehoma, Bowlegs 4, se sw 15-8-6 15-8-6. Mid-Kansas, Presley 2, se ne 3-8-6. Mid-Continent, Cully 1, ne se 3-8-6. Texas, Strothers 4, sw nw 2-8-6; Strothers 3, ne nw nw 2-8-6. Prairie, Stidham 2, se sw ne 11-9-5; Stidham 3, sw se ne 11-9-5; Bowlegs 1, nw sw nw 22-8-6. Carter's Simpson 3, nw sw sw 35-9-6. Pure, Strothers 1, se ne sw 34-9-6. Gypsy's Cudjo 5, sw nw se 34-9-6; Cudjo 4, nw sw ne 34-9-6. Empire, Wilson 4, sw nw ne 34-9-6. Carter's Pounder-1 se 4-9-6; Cramer 2, nw sw se 34-9-6. Phillips, Strothers 5, ne nw se 27-9-6. Carter, Lukes 8, nw se ne 27-9-6; Lukes 7, sw ne ne 27-9-6; Gilliland 2, se nw ne 27-9-6. Interocean, Payne 1, nw ne se 12-9-5. Carter, Payne 3, ne nw se 12-9-5. Barnsdall, Wasutka 1, ne sw 12-9-5; Davis 2, se nw se 11-9-5; Cudjo 2, c n½ s½ se 11-9-5.

Sequoyah County — Sequoyah, Fox 1, c nw sw 33-11-25.

Stephens County—Gilmer et al, Stewart 2, ne se se 24-1-4. Skelly, Enscore 1, ne se 24-1-4; Enscore 2, sw ne se 24-1-4.

Tulsa County—Holmes et al, Robinson 2, c n l nw se 14-19-10; Henry 2, nw se 22-19-10; Stern 2, se 25-19-10. C. G. Tibbens, Gragory 1, se sw 14-18-12; Crider et al, Johnstone 1, se ne sw 15-16-12.

Wagoner County—H. H. Taylor, Lucky 1, se sw sw 11-18-15. Boyle, Cloe 3, se sw ne 32-18-16.

(Continued on page 92)

These Advantages are Exclusive with the Guiberson Swab

Type "E" Production Swab

1 RUNS IN WITHOUT STICKING, because the flexible cups yield readily in passing kinks and projections.

2 RUNS IN FASTER, because fluid easily by-passes the flexible cups, as well as passing through the valve.

3 IS MORE EFFICIENT AND RAISES FULL LOAD, because the fluid pressure works ***with*** the cups, holding the rims tightly against walls.

4 WILL NOT WEAR OUT CASING, because flexibility of cups eliminates excessive friction. Runs of 70 days have resulted in practically no wear on casing.

5 HAS CUPS OF EXTREME DURABILITY, because made of specially developed composition. Cups will swab for weeks in high gravity oil without deterioriation.

6 ELIMINATES TORN RUBBERS, because edges of cups are guided safely past projections by imbedded, flexible guide wires.

7 WILL NOT KINK WIRE LINE, because fluid is entered easily, due to the ease with which it by-passes cups.

8 SAME DIAMETER OF CUPS WILL OPERATE IN TWO WEIGHTS OF CASING, because of great flexibility of cups. Fully patented.

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GUIBERSON

BETTER BE SAFE THAN SORRY

Say you saw it in The OIL WEEKLY

WILDCATS FROM ALL SECTIONS

LOUISIANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
Bossier Parish—		
Harrel Drlg. Co., Atkinson 1, 2-18-12	*	1220
Palmer Corp., Bossier L&L Co. 3 3, 9-16-11	*	3832
Caddo Parish—		
Big Lake Oil Co., Rhodessa 1, 23-23-16	*	3003
Galloway et al, E. K. Smith 1, 15-21-16	*	2330
Caldwell Parish—		
Humble, La. Central L. Co., 4-A, 12-11-2e	*	1754
Grant Parish—		
Gulf, Swope B-1, 1-9-1w	*	1763
LaSalle Parish—		
Modisette Drlg. Co., Urania 4, 7-10-2e	*	1530

Bienville Parish—S. F. Borden's L. & A. 2, 9-15-7, set 12½ in. at 210 ft. Kimbrough et al's Cargyle 1, 27-15-8, sd 1550 ft.

Bossier Parish—Clark & Norton's Ford 1, 32-23-12, dr 2882 ft. Doern et al's Thomas 1, 9-22-11, tested dry 2765 ft. Glassell et al's Gibson Tiguer 1, 14-21-14, sd 900 ft. Gulf Ref. Co.'s Hodges 6, 24-16-12, set 4½ in. 1865 ft. Humble, B&W 30, 15-19-11, set 15½ in. at 503 ft. Magnolia Pet. Co.'s Dodson 1, 15-23-12, r 2688 ft. Palmer Corp., Bossier L&L Co. 4, 9-16-11, set 12 in. at 321 ft. Ramsey et al's Dodson Est. 1, 16-23-12, dk, sd 2392 ft; Jeter 1, 23-17-12, rig. Simms Oil Co.'s Sandidge 2, 5-18-11, dr 1814 ft. The Texas Co.'s Caplis 14, 24-16-12, wosr 1551 ft. Tubbs et al's Jacobs 1, 26-20-13, dr 2235 ft. Triangle Drlg. Co. et al's Levy 1, 13-20-14, dr 2500 ft.

Caddo Parish—Bahan et al's Wilburn 1, 4-7-16, dk; Wilburn 2, set 6 in. at 911 ft. Bethany O. & G. Co.'s Offenhauser 1, 1-20-16 fsh 2200 ft. Berston's Murff 6, 12-21-16, set 6 in. at 1030 ft. Burford et al's Dambley 1, 2-20-16, set 4½ in. at 2114 ft. Bussa & McGoldriek's Becham 6, 28-21-15, set 10 in at 63 ft. W. D. Chew's Fee 5, 33-21-16, set 10 in at 47 ft. Dixie Oil Co.'s Robertshaw 81, 13-21-15, dr 3853 ft; Neel A-2, 13-21-15, dr 3692 ft. Dodson et al's Rives 4, 5-20-16, blg 1877 ft. Double I Oil Co.'s Spell 10, 15-21-15, dk. Empire Gas & Fuel Co.'s Levee Board B-1, 36-21-16, set 15½ at 20 ft. J. B. Files Payne 1, 32-23-16, sd 925 ft. Falcon Drlg. Co.'s Schmidt 1, 27-20-1 15, dk. A. C. Glassell's Thigpen & Herald 1, 26-18-16, set 8 in. at 847 ft. Gilliam Synd.'s Sellington 1, 27-21-14, sd 2732 ft; Taylor 1, 17-21-14, blg 914 ft. Gulf. Ref. Co.'s Ferry Lake 266, 28-20-16, wosr 2260 ft; Ferry Lake 267 28-20-16, wosr 2256; Ferry Lake 268, 22-20-16, rig; Tyson 13, 14-21-15, set 12½ in at 295 ft. Haynes Bros. La. L. S. & P. 1, 8-19-16, sd 3712 ft. N. M. Handcocks Hampton 3, 15-21-15, wosr 1700 ft. Magnolia Pet. Co.'s Caddo L-B 2, 8-20-15, set 4½ in. at 2910 ft; Dillon 16, 24-21-15, perforating casing at 1660 ft; Dillon 18, 24-21-12, dk; Dillon 20, 24-21-15, set 6 in. at 1385 ft; Planters 4, 7-21-14, set 4½ in. at 2167 ft; Robertshaw 20, 23-21-15, dr 3438 ft. H. I. Morgan Glassell 1, 10-20-15, dr 1960 ft. Ohio Oil Co.'s Moodie Fortner 1, 5-22-16, dr 2070 ft. Owl Oil Co.'s Bell 1, 5-17-16, rig; Wilburn 5, 4-17-16, lcn. Shreveport Oil Corp.'s State 1, 28-21-16, dk; State 2, 27-21-15, dr 1060 ft. Standard Oil Co.'s Trosper 1, 34-18-16, set 6-inch at 2714; Stiles 180, 33-21-16, set 10-inch at 130 ft; Stiles 181, 33-21-16 set 6-inch at 1800 ft. Standish Oil Co.'s Allen 11, 23-22-15, set 6-inch at 1015 ft. The Texas Co.'s C. M. L. 47, 23-21-15, dr 3647 ft; Hardy 1, 10-20-16, dr 2302 ft; Herndon 6, 22-21-15, dk; Hicks Payne 5, 21-21-15, sd 3143 ft. Thomas et al's Muslow Fee 7, 31-21-15 wosr 2210. Tholl Oil Co.'s Muslow 3, 31-21-15, set 8-inch at 200 ft.

Caldwell Parish—Southern C. O. P. Co.'s Caldwell L. & T. Co. 8, 5-13-5e, rig.

Catahoula Parish—S. D. Hunter Tensas Delta 2, 21-9n-7e, rig. Lochnager O. & G. Co.'s Beazley 1, 26-9n-6e, set 4½-inch at 2686 ft.

Claiborne Parish—ElDorado Chief Oil Co.'s McElwee 1, 13-23-7, sd 3040 ft. Magnolia Pet. Co.'s Lee 1, 16-22-8, dr 3187 ft. Mitchell et al's Wilburn 1, 23-17-7 sd 2220 ft.

DeSoto Parish—Craige et al's Riggs 1, 27-15-13, sd 3251 ft. Dixie Oil Co.'s Jenkins 1, 9-12-11 fsh 5283 ft. Helm & Jarmen's Joyner 1, 28-12-11, sd 3018 ft. Magnolia Pet. Co.'s Logan 1, 17-10-12, sd 232 ft. W. M. Sebastin Synd.'s Sebastin 1, 11-10-13, dr 1932 ft. Seip et al's Robertson 1, 18-10-12, sd 300 ft. The Texas Co.'s Wemple A-12, 2-12-12, set 10-inch at 41 ft.

Franklin Parish—Exploration Oil Co.'s Moore 1, 12-11-6e, set 6-inch 2120 ft. Harrell & Hall's Duncan 1, 20-13-7e, sd 2057 ft. Barbour Oil Co.'s Baker 1, (Formerly Robinson & Long's) 3-15-7e, dr 1950 ft.

Grant Parish—Gulf Ref. Co.'s Swope B-2, 12-9-1w, dr 1700 ft; Rue et al's Elias & Williams 1, 10-7-4w, dr 1700 ft. M. B. Swope's Fee 1, 18-9-1e, set 10-inch at 102 ft.

Jackson Parish—Grigsby et al's Adams 1, 22-17-4w, sd 2900 ft. Houseman et al's Norton 1, 34-15-3w, sd 400 ft. Ferguson Trust's Martin 1, 3-15-1e, flowing sw 3475 ft. Louisiana Pet. Co.'s Davis Lbr. Co. 3, 22-16-4w, sd 2301 ft.

La Salle Parish—Tunica Pet Co.'s L. & A. 23, 9-7-2e, coring 2286 ft; L. & A 25, 8-8-3e, sd 1856 ft. Yeary et al's Urania 5, 8-10-2e, set 10-inch at 102 ft. Wingfield et al's Urania 6, 2-9-1e, set 6-inch at 1070 ft; Gibson 1, 2-9-1e, set 10-inch at 100 ft.

Moorehouse Parish—Consolidated Carbon Co.'s White 1, 16-20-4e, set 8-inch at 620 ft. Louisiana Development Co.'s Fee 38, 21-20-5e, dr 2158 ft. Natural Gas Prod. Co.'s Hardy 1, 18-20-5e, set 8-inch at 924 ft. United Carbon Co.'s Townsend 1, 29-21-5e, dr 2035 ft; Atkins 1, 26-20-5e, dk.

Nachitoches Parish—Gulf Ref. Co.'s Cobbie & Hardaman 1, 9-7-7w, set 12-inch at 68 ft. Lawson et al's Clark & Moore Lbr. Co. 1, 23-5-6w, coring 2540 ft. Ohio Oil Co.'s Thomas 1, 23-13-6w, set 10-inch at 205 ft Reidheimer et al's Wafer 1, 3-11-8, tested dry at 1515 ft. Three League Oil Co.'s Long 1, 34-10-8w, rig. Tunica Pet. Co.'s L. & A. 24, 35-13-6w, dr 2416 ft. Wenzel et al's Brown 1, 38-10-7w, dk.

Ouachita Parish—Easterlin et al's Sicard 1, 18-18-4e, dr 2240 ft. Jordan Drlg. Co.'s Moore 1, 18-184e, set 6-inch at 2196 ft. La. Development Co.'s Fee 39, 1-19-4e, dr 1685 ft. La. Gas Prod. Co.'s Dewdrop 5, 20-20-5e, set 12½-inch at 197 ft. Ouachita Natural Gas & Oil Co.'s D'Arbonne 2, 25-19-2e, 2780 ft. Peerless Co.'s Moore 3, 29-20-4e, lcn.

Rapides Parish—Hincey et al's Barrow 1, 29-5-2e, sd 2800 ft. Minnesota Oil Corpn.'s Wattermack 1, 7-5-3w, set 8¼-inch at 1820. Libuse Oil Co.'s Voda 1, 14-4-1e, sd 2550 ft.

Red River Parish—Alden Oil Co.'s Powell 1, 13-11-10, sd 2301 ft. Amerada Pet. Co.'s Long Bell Lbr. Co.'s 1, 5-13-9, dr 300 ft. Gulf Ref. Co.'s Robinson 37, 25-13-11, blg 2562 ft; Kennedy 23, 24-13-11, set 10-inch at 215 ft. Magnolia Pet. Co.'s Continental Pelly 24, 6-12-10, wosr 2810 ft. Phillips Pet. Co.'s Long Bell Lbr. Co. 1, 16-12-8, dr 2610 ft.

Richland Parish—Gulf Ref. Co.'s Rhymes 2, 5-16-6e, set 6⅝-inch at 2312 ft; Wayne L. & T. 1, 36-17-5e, dr 2854 ft; Seibert 1, 35-17-5e, dk; Seibert 2, 11-16-5e, set 15½-inch at 130 ft. S. D. Hunter's McCoy 1, 29-16-5e, arr to test at 2427 ft; Seibert 1, 1-16-5e, sd 2358 ft. Helm et al's Tensas 1, 10-14-5e, dk. Louisiana Pet. Co.'s Binion 1, 22-17-6e, sd 2474 ft. Oliver et al's Hatch 1, 2-15-5e, trying to set casing at 2316 ft. Ruston Drlg. Co.'s Earl 1, 5-16-6e, set 12½-inch at 165 ft. Stovall Drlg. Co.'s Mitchell 1, 20-17-6e, set 6-inch at 2310 ft. Standard Drilling Co.'s Delta H. L. Co. 1, 22-16-7e, dr 200 ft. Tex-La Carbon Co.'s Broughton 1, 1-15-6e, dr 2472 ft.

Sabine Parish—Arkansas Fuel Oil Co.'s Logan 2, 28-10-12, rig; Logan 5, 28-10-12, blg 3205 ft. Beckman & Freeman Logan 1, 28-10-12, setting 6-inch at 3100 ft Emlett et al's Bowman Hicks 5, 11-7-14, sd 4070 ft; Bowman Hicks 7, 11-7-14 milling on bit at 2623 ft; Sabine Lbr. Co.'s 1, 8-7-1e dk. Lewis Clark Pet. Co.'s Wyatt 1, 23-5-12, dr 3710 ft. Magnolia Pet. Co.'s L. L. L. Col, 11-6-11, fsh 3262 ft; Hall 1, 33-10-12, rig. Moffitt et al's Moore 1, 5-2-12, dr 2748 ft. Ohio Oil Co.'s Cook 1, 34-10-12, bld dry at 3414 ft.

Union Parish—Camette et al's Tugwell 1, 21-22-1e, sd 1525 ft. Clark Creek Pet. Co.'s Frost Johnson 2, 9-23-1e, sd 2307 ft. Interstate Natural Gas Co.'s Parks 1, 23-20-3e, dk. Rhodes et al's Fuch 1, 28-23-2w, dr 2200 ft. Ruston Drlg. Co.'s Gulley 1, 16-20-4e, set 6-inch at 2101 ft.

Webster Parish—Davis et al's Lee 1, 22-22-9 sd 2834 ft. S. A. Jones Roberts 1, 20-19-10, dr 1291 ft. Louisiana Oil Ref. Corp.'s Davis 1, 23-21-10, tested gas at 4346 ft. Magnolia Pet. Co.'s Robbins A-2, 21-21-10, blg 2560 ft; Cox 3, 23-21-10, sd 314 ft. Northwest Louisiana Gas Co.'s Coyle 1, 21-21-10, dr 3425 ft. Ohio Oil Co.'s Bank of Cotton Valley 2, 22-21-10 dk; Bank of Cotton Valley 4, 22-21-10, fsh 4573 ft. Woodley Pet. Co.'s Cox 1, 22-21-10, dr 4470 ft.

Winn Parish—Cherokee Pet. Co.'s Albrighton 1, 27-10-1e, sd 900 ft. Dodge et al's Tremont 1, 35-13-3w, sd 1043 ft. Greer et al's Bodcaw 2, 9-11-4w, sd 50 ft. Humble O. & R. Co.'s L. & A. 20, 27-10-2w, dr 1515 ft. H. L. Hunt's Tremont 1, 27-10-1e, set 12½-inch at 100 ft. J. C. Long's Milam 1, 26-13-3w, sd 1450 ft. Ohio Oil Co.'s Eidenborne 2, 4-12-1w, hole junked at 4457 ft; McCarty 1, 5-12-1w, lcn; Rowe et al's Urania 1, 26-11-1e, dk. H. M. Roaks Southern Mineral Co. 1, 19-11-3w, dr 295 ft. F. A. Schuman's Albritton 1, 27-10-1e, sd 1518 ft. Standard Oil Co.'s Tremont 1, 1-12-2w, dr 3745 ft.

SOUTH LOUISIANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
Cameron Parish—		
Union Sulphur Co., Gulf Land 3	*	2439
Vincent 2,	*	1808

Assumption—Union Sulphur Co.'s Parish School 1, dr 1095 ft lime rk.

Calcasieu—

Sulphur—Union Sulphur Co.'s Fee 720, dr 4518 ft, lime rk. Dr. Hintze's Beckenstein 1, dr 4260 ft sand.

Starks—Gulf's Lutcher-Moore 5, dr 4001 ft gbo; Industrial Lbr. Co., 1, dr 2195 ft gbo. Border Research Corp's Calcasieu Lake 1, dr 4505 ft gbo.

Cameron—Pure's Sweet Lake 5, Sweet Lake, dr 400 ft gravel. Union Sulphur Co.'s Vincent 2, abn 1808 ft, anhydrite.; Little 1, fsh 1839 ft dr stem.

Hackberry Island—Yount-Lee's State Land 4, dr 1300 ft shale; School Land 6, dr 4860 ft rk. Gulf Land 10, dr 3360 ft rk, oil odor. Border Research Corp's Mallard Bay 1, Mallard Bay, wt on dr stem 2690 ft; Sabine Lake 1, Sabine Lake, set 80 ft 18-in cas.

Evangeline—Texas Co.'s Guillory 2, Pine Prairie, dr 4240 ft rk.

Jeff Davis—Estropal Oil Co.'s Le Duex 2, no report. Fred Getty's Lacasine Irri 1, tools stuck 3515 ft sandy shale.

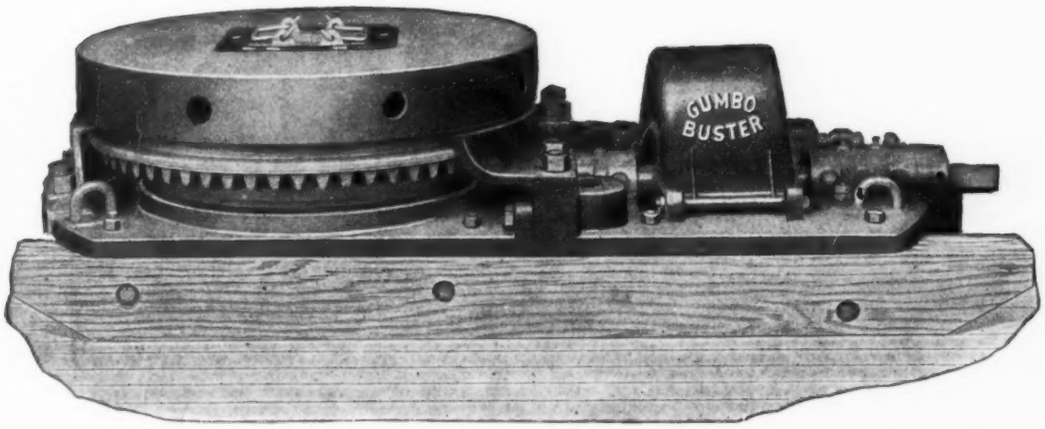
Iberia—

Eagle Point—Gulf's State Z-2, sd high water; Broussard 1, temp. sd 3193 ft. Calcasieu Oil Co.'s Schwing A-1, dr 2756 ft rk. Border Research Corp's Vermillion Bay 1, Grand Lake, dr 1004 ft gbo.

St. Martin—Rycade's Atchafalaya 1, cored sand with ooil odor, 3781-90 ft.

St Mary—Border Research Corp's Grand Lake 1, wt on orders, 4519 ft gbo; West Cote Blanche 1, sd high water.

A New and Improved Gumbo Buster 20" Make and Break Rotary



This rotary still retains the many desirable features of the first Gumbo Buster Make and Break Rotary. Here are a few of the reasons for its superior service.

1. All working parts made from high grade cast electric steel.
2. Pinion shaft is larger and runs in two long boxes, equipped with adjustable ring oiled bronze bushings.
3. In this make and break rotary there are no pins, bars, or double tables used. It is as simple in construction and operaton as the ordinary flat top rotary.
4. The top of the rotary table is smooth and level across the entire surface, which allows the slips to be slid across the table easily.
5. Although the height of the table has been increased a few inches the rotary is still low enough for convenient work.

A New and Important Improvement Has Been Made and Added to These Features

The lifting ring in which the slips are placed has been lengthened in order to accommodate the new style long slips now in use. This new lifting ring backs up the long slips through their entire length, which decreases the danger of breaking the slips and swaging or "necking" the pipes.

Sold Exclusively By

Republic Supply Company

OIL AND GAS WELL SUPPLIES
ROTARY AND CABLE TOOLS

ARKANSAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
Bradley County—		
Ark. Fuel O. Co., Ark. Lbr. Co. 1, 25-16-12	*	3144
Ouachita County—		
H. M. Howell, Ponder 1, 19-12-17..	*	1680
Union County—		
Lion O. & R. Co., Bilyew C-7, 8-16-15	*	....
Natural G. & F. Co., Flenniken 4, 8-16-15	*	2765
Superior Oil Co., Cardell 2, 5-18-13	*	3062

Ashley County—Rhodes et al's Bledsoe 1, 20-15-7, sd 2554 ft.

Bradley County—Johnson & Adams' Southern Lbr. Co. 1, 12-12-12, dr 1800 ft.

Columbia County—Colquitt et al's Duffer 1, 23-18-19, set 12½-inch at 108 ft. Columbia Synd.'s Whitehead 1, 14-19-23, killing waste flow at 2350 ft. Haynes et al's Runyan 1, 3-16-21, sd 150 ft. Mitchell et al's Franks 1, 25-19-22, sd 150 ft. Mitchell & Isle's Bodcaw 2, 4-20-21, set 10-inch at 150 ft. Mair et al's Gantt 1, 15-17-22, dk. Scott Phillips' Davis L. & I. Co. 2, 6-18-20, sd 2145 ft. Wingfield et al's Bodcaw 1, 4-20-21, sd 2025 ft.

Clark County—Whelen Oil Co.'s Barrow 1, 35-10-20, set 8¼-inch at 1332 ft.

Drew County—McClintock et al's Ogle 1, 35-13-5, sd 2550 ft.

Grant County—Jones et al's Meek 1, 5-4-11, set 10-inch at 100 ft. Shaffer Oil Co.'s Long Bell 1, 36-5-12, set 12½-inch at 105 ft.

Garland County—Chaywood Oil Co.'s Malvern Lbr. Co. 1, 17-2-17, sd 212 ft.

Hempstead County—Burton et al's Garland 1, 23-10-25, sd 2210 ft.

LaFayette County — Arkansas Fuel Co.'s Duty 1, 11-19-23, dr 2800 ft. Ken-Saw Pet. Co.'s Red River Lbr. Co. 2, 5-20-24, sd 2840 ft.

Lincoln County—Pine Prairie Oil & Gas Co.'s Carter 1, 33-10-6, sd 240 ft.

Little River County—Greeson et al's Waldrip 1, 4-13-31, sd 1740 ft. Grote et al's Allen 1, 2-13-31, sd 2941 ft. Johnson et al's Hawkins 1, sd 1594 ft.

Miller County—Lenge et al's Dale 2, 28-15-26, r 2765 ft. W. D. Nash's Priest 1, 26-14-26, sd 3850 ft.

Nevada County—Fruen et al's Cross 1, 12-13-22, sd 1720 ft; Rhodes 1, 22-12-21, dr 1975 ft. Holmes et al's Wallace 1, 11-14-21, sd 1200 ft. Humble Oil Ref. Co.'s Bodcaw 4, 9-15-22, set 6⅝-inch at 3580 ft.

Ouachita County—Copenhagen et al's Berg 3, 13-15-17, rig. J. E. Crosby's Berry 12, 33-15-15, dr 4296 ft. Exchange Oil Co.'s Umsted 3, 4-16-15, dk. A. T. Grayson's Reynolds 1, 21-14-17, set 6-inch at 1744 ft. Gulf Ref. Co.'s Bennett 11, 33-15-15, set 10-inch at 297 ft. Imperial O. & G. Co.'s McClannahan 9, 6-16-15, sd 2682 ft. W. R. Keever's Hicks 1, 27-15-16, cementing off bottoms at 2290 ft. Magnolia Pet. Co.'s Gosden 2, 15-15-19, set 6⅝-inch cas at 1547 ft; Morgan 1, 7-15-19, dk; Umsted 7, 5-16-15, arr to plug off. Marine Oil Co.'s Umsted 11, 5-16-15, set 6⅝-inch at 2356 ft. J. D. Reynolds' Chandler 1, 3-14-18, set 4½-inch at 1824 ft. Sutton's Schoolhouse 2, 28-15-16, sd 3060 ft. T. & P. Coal & Oil Co.'s Laney 9, 31-15-15, dr 2580 ft. Unity Pet. Co.'s Umsted A-8, 33-15-15, tested sw 2389 ft; Murphy 1, 2-16-15, sd 2690 ft. Wesson et al's Culp 1, 22-15-19, wosr 2212 ft.

Union County—C. H. Allison's Howard 1, 8-19-15, sd 15 ft. Arkansas Fuel Oil Co.'s LaGrone 8, 1-16-17, dk. Bondurant et al's Garner 1, 8-18-22, r 2635 ft. Crescent Oil Co.'s Saxon 1, 5-16-16, sd 53 ft. Garrett & Modisette's Union Saw Mill 1, 7-18-13, fsh 3730 ft. W. H. Gilliland's Hodges B-1, 1-16-17, tested sw 2527 ft. Gulf Ref. Co.'s Murphy 23, 9-16-15, set 6⅝-inch at 2676 ft; Murphy 44, 3-16-15, set 10-inch at 308 ft. Humble O. & R. Co.'s Flenniken B-2, 9-16-15, arr to deepen with cable tools at 2776 ft; Payte 10, 10-16-16, rig. Holly Field et al's Murphy 2, 9-16-15, wosr 2757 ft. Imperial O. & G. Co.'s Murphy 7, 9-16-15, tested gas at 2707 ft; Murphy 5, 9-16-15, fsh 2565 ft; Goodwin 1, 22-17-16, sd 3118 ft. Keen & Wolfe's Murphy 5, 9-16-15, set 4-inch at 2706 ft. Lion O. & R. Co.'s Flenniken A-9, 10-16-15, clearing out with cable tools at 2396 ft; Lawton A-11, 10-16-15, set 10-inch at 4228 ft; Murphy H-2, 9-16-15, milling out casing at 2285 ft. Lyall et al's Stegall 1, 11-17-13, dk. Magnolia Pet. Co.'s Crawford 2, 8-16-16, r 2602 ft; Crawford 3, 8-16-16, dk; Freeman 3, 7-16-16, dr 2400 ft. Laney 3, 8-16-16, dk; Laney 4, 8-16-16, dk; Murphy 3, 8-16-15, dk; Murphy 9, 8-16-15, coring 2628 ft; Wilson 6, 17-16-15, dr 2540 ft; Wilson 7, 17-16-15, dk; Union Lbr. Co. 1, 21-16-16, dr 288 ft; Marine Oil Co.'s Wünn Est. B-1, 10-18-13, dr 2770 ft. Thompson A-2, 10-18-13, setting 6-inch at 2695 ft. J. L. Meek's Milner 2, 15-17-16, rig. Mountz et al's Pratt 6, 8-18-15, r 1101 ft. O. G. Murphy's T. C. Murphy 6, 9-16-15, wosr 2340 ft. National Consolidated Pet. Co.'s Fagg 2, 8-16-16, wosr 2639 ft. Natural Gas & Fuel Corp.'s Murphy F-1, 9-16-15, wosr 2773 ft; Bilyew 4, 9-16-15, set 5-3/16-inch and 4½-inch at 2312 ft. J. J. O'Brien's Saxon 1, 16-16-16, dk. Ohio Oil Co.'s Crane 1, 1-17-14, cementing off bottom 3014 ft; Murphy B-4, 9-16-15, set 4¾-inch at 2692 ft. J. W. Olvey's Simmons 1, 15-18-13, set 6-inch at 2662 ft. Peer Oil Co.'s Palmer B-1, 9-16-15, dr 2600 ft. Roxana Pet. Co.'s Flenniken A-3, 10-16-15, wosr 2601 ft. Rovenger Oil Corp.'s Harrel 4, 14-17-16, dk; McClain 1, 4-17-14, set 8¼-inch at 2610 ft. Simms Oil Co.'s Crawford 1, 4-18-13, set 12½-inch at 238 ft. Stewart et al's Murphy 8, 9-16-15, set 6⅝-inch at 2761 ft. Sunny Jim Oil Co.'s Flenniken 4, 9-16-15, skidded over and started new hole, set 10-inch at 240 ft. Superior Oil Co.'s Jerry 1, 32-17-13, sd 3022 ft. Sun Oil Co.'s Hays 3, 3-16-15, perforating cas 2293 ft; Unity Pet. Co.'s Roper 15, 3-16-15, dk. Wingfield et al's Green 1, 15-19-13, dk.

KANSAS

Barber County—Vickers Pet. Co. et al's Ott 1, sw 30-32-14, dr 4200 ft.

Barton County—Huffin et al's Smith 1, ne se se 17-19-11, fsh 3090 ft.

Butler County — Burford & Brimm et al's Lambert 1, sw se sw 20-25-7, dr 200 ft.

Cowley County—W. M. Neeley's Henderson 1, c nw ne 5-33-5, rig.

Lyons County—Culp et al's 1, sw se 26-19-10, rep rig 1500 ft. Gashe & Balliere's Stratton 1, se nw 32-20-13, sd 1695 ft.

Reno County—Sheldon et al's Hanfison 1, se nw 10-23-4, dr 4050 ft.

Seward County—Wilson et al's Son 1, ne ne ne, 14-33-33, sd 400 ft.

Marion County—Skow Bros.' Williams 1, ne sw 4-17-4, loc.

McPherson County—McLaughlin et al's Ross 1, se 11-9-3 dr 1800 ft. Merrian et al's 1, sw sw sw 29-18-2, ts 2931-61 ft, fsh.

Sedgewick County—Marland et al's Schnidt 1, nw sw sw 5-28-1, dr 740 ft.

OKLAHOMA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
Linncoln County—		
Wentz, Lukenbeal 1, sw se 34-17-2..	*	4846
Logan County—		
Zingery et al, Baker 1, nw ne 5-17-1	*	5712

Beckham County—Magnolia's 1, ne 21-9-23, lcn.

Caddo County—W. J. Hartley's Calbreath 1, se ne se 28-5-12, owd, sd 3394 ft. J. A. Abernathy's 1, c sw ne 23-5-12, show oil 2305-2307 ft, dr.

Canadian County—T. B. Slick et al's Pazourock 1, sw ne 29-13-5, dr 4550 ft.

Cleveland County—Sooner's 1, c sw 15-7-1, td 2974 ft, fsh, sd. Magnolia's 1, c s l sw 11-6-1, dr 2790 ft. Mid-Continent's 1, sw nw 20-8-1, dr 2550 ft. Geo. Browne's 1, center 7-9-1, dr 2985 ft. Wiser's 1, sw nw 24-6-1, dr 2500 ft.

Comanche County—Mid-Kansas' Cox 1, ne se ne 20-1-12, td 1920 ft, sd.

Garfield County—Sinclair's Fee 1, sw sw ne 2-20-5, cement off tools 5036 ft.

Grant County—Ostot Dev. Co.'s Snyder 1, ne 6-28-4, td 4546 ft, fsh 5-inch. Brazell & Moses' Royce 1, sw nw 34-28-4, sd 550 ft. Dedman et al's Sherran 1, ne sw 16-26-3, td 1965 ft, dr by 10-inch cas. Gypsy's Megg 1, se nw 33-26-3.

Hughes County — Snowden & McSweeney's Stewart 1, nw se 11-5-9, proposed lcn.

Kiowa County—A. C. Varner's Boham 1, se sw nw nw 6-6-10, sd 1127 ft.

Kingfisher County—Pet. Eng. Core Drlg. Co.'s Canfield 1, c nw se 6-16-7, rig. McKenna et al's Sturgeon 1, nw sw 27-16-6, sd 2115 ft. Reiter et al's Davisonal 1, sw 23-15-5, rig. Rasey's Dickerson 1, se 25-17-5, dr 3450 ft.

Kay County—Ponca Lee's McNeal 1, ne 32-26-2, td 2795 ft, sd. Tonkawa Dev. Co.'s McDaniels 1, c se se se 15-25-1, hfw 2450-75 ft, dr 2540 ft.

Lincoln County—Mid-Kansas' Griswold 1, ne nw 33-17-4.

Logan County—T. B. Slick's Berry 1, sw se 28-17-, sand 4658-61 ft, 2800 ft oih, show water 4666 ft, ur 5-inch 4770 ft. Blackford's Lier 1, c s l n½ se 28-16-1, sd 1675 ft, litigation. Bryan & Emery's 1, nw se 33-19-4, show oil 4040 ft, cement 6-inch, dr plug and water broke in. Carter's Rogers 1, sw ne sw 32-19-3, ur 6-inch 5024 ft. Brown & Blevens' Lovell 1, sw nw 9-18-4, dr 4095 ft. Healdton's Braggs 1, nw se 16-18-4, dr 3537 ft. T. P.'s Jewell 1, nw ne nw 27-18-4, spud; Speaks 1, se nw 33-18-4, dr 1610 ft. Haley et al's Quair 1, sw se 33-18-3, td 1900 ft, rig rebuilt and co.

Cimmaron County—Jake Phillips' 1, nw 24-6-2, dr 1750 ft. Sinclair's 1, nw 22-5-2, dr 1600 ft. RRamsey Bros.' St. Land 1, c nw ne 27-5-5, top 4095 ft, td 4150 ft, show for 35 bbls. Ramsey Pet. Co.'s School land 1, sec 4-5-6, dr 1650 ft. Gladys Belle's Israel 1, sw ne 25-3-7, dr 1920 ft. Fenton et al's Smaltz 1, se ne ne, spd and sd.

Payne County—Twin State's Tibler 1, ne nw ne 23-18-1, dr 3070 ft.

Pottawatomie County—Shaffer et al's Ives 1, ne se se 12-10-3, sd 3620 ft. Davis et al's McGrathy 1, se nw 10-6-3, dr 4900 ft. Mid-Kansas' Mullens 1, ne sw sw 34-8-3, dr 2890 ft. I. T. I. O. Co.'s School land 1, se sw 16-8-5, td 3775 ft, cement cave. Roxana's 1, nw sw 22-7-3, cement cave 3650 ft. Magnolia's School land 1, sw se 36-7-3, dr 530 ft.

Seminole County—Barnsdall's Sullivan 1, ne sw 10-9-5, dr 2020 ft. Superior's Noble 1, se sw se 10-9-6, hl 4105-4145 ft, hfw, ts Wilcox 4315 ft. Pure's Joah 1, c e l nw ne 15-9-7, ts 3494 ft, td 3515 ft, 10 bbls oil 3516 ft pb. Champlin et al's Sewell 1, ne se sw 15-8-8, r ur. Magnolia's Strothers 1, se nw 17-8-6, dr 2735 ft. I. T.. I. O. Co.'s Sandlin 1, ne ne 9-7-6, 2781 ft, r ur; House 1, nw nw nw 1-7-6, td 3200 ft, ur 8-inch cas; Sarah Wiseman 1, nw sw 32-7-7, dr 2650 ft. Kennedy et al's Neley 1, c s½ ne se 24-5-5, top sandy lime 2839 ft, td 2915 ft. Simmons et al's Lammeter 1, nw ne ne 7-7-6, rig.

Tillman County—Ossie Drilling Co.'s Snelling 1, se 13-1-18, sd 1525 ft. P. C. Dean et al's Deaner 1, c se se 21-3-16, dr 2650 ft. Pearson's Nonts 1, sw 3-5-15, lcn.

Texas County—H. F. Wilcox's Zea 1, sw se 29-3-12, ur 6-inch at 3620 ft. Haley et al's Ellison 1, nw se se 4-1-12, dr 3750 ft. Connell et al's Tensey 1, se nw 5-1-19, spd and sd.

Pontotoc County—American Oil Co.'s Roy 1, se nw 34-5-6, sd 2000 ft. Bowles et al's Lewis 1, c se sw 29-5-5, spd and sd. Tom Slick's Carham 1, sw se 21-5-6, dr 725 ft. W. R. Ramsey's Butler 1, ne ne 20-5-8, fsh 300 ft. Shaw et al's 1, ne sw 33-5-6, dr 1360 ft.

Oklahoma County—J. O. Cromwell's Walgren 1, c se 21-14-3, spd.

MOUNTAIN STATES

COMPLETIONS

WYOMING

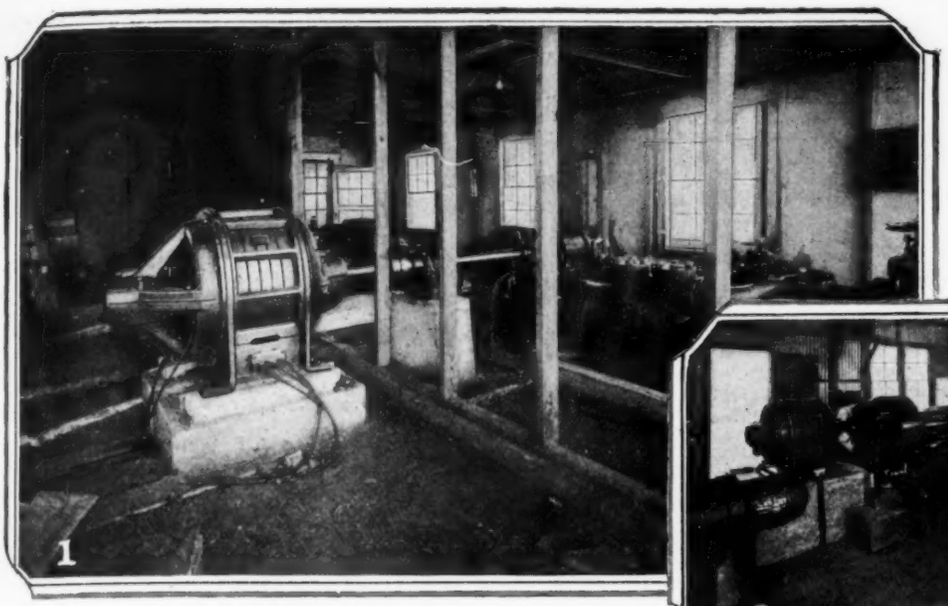
Company, Well and Location	Initial Production Bbls.	Depth
Fremont—		
Union Oil Co., 1C	*	4365
Prod. & Refiners, Ferris 6	*	1850

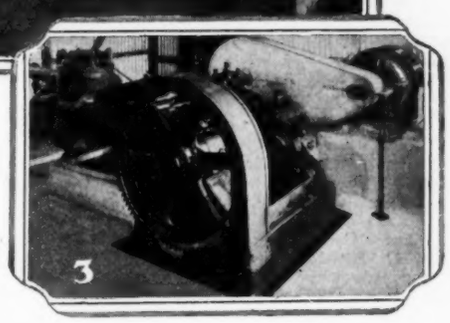
COLORADO

Company, Well and Location	Initial Production Bbls.	Depth
Iles Dome—		
Midwest, 1	2000	3203

WYOMING

Ohio's Byron 2, 33-56-99, landing 8 in cas 2480 ft; Rock River 12, 2-19-78, dr 1400 ft; Rock River 5, 3-19-78, dr 2862 ft. Wyoming-Montana Dev Co.'s Lance Creek 1, ne 7-35-65, dr 3450 ft. Graybeal Oil Syn.'s Graybeal 1, ne 16-28-80, dr 3050 ft. Union Oil Co.'s Hot Springs County 1S, nw 34-43-91, dr 4330 ft; Hot Springs County 1B, nw 28-43-91, dr 2585 ft; Park County 1T, nw 22-47-101, dr 950 ft; Fremon County 1C ne 15-5-1, abn 4365 ft. Iowa-Wyoming Investment Co.'s Megown 1, ne 30-1-2, sd 3305 ft. Buck Creek Oil Co.'s Ant Hills 1, ne 25-37-63, loc. Platte River Drilling Association's Guernsey 1, nw 12-26-67, dr. Producers & Refiners' Garland 2, 24-56-89,sd 2640 ft; Murphy 1, 8-43-91, fsh 2990 ft; Ferris 19, 25-26-87, dr 1865 ft; Muskrat 1, 34-34-92, rig





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200-58H

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

completed; Big Sand Draw 5, 10-32-95, dr 3422 ft; Big Sand Draw 7, 14-32-95, dr 2760 ft; Wyana 1, 25-26-87, dr 2660 ft; Tensleep 1, 13-46-89, rig completed; Medicine Bow 1, 25-21-79, dr 3950 ft. Texas Production Co.'s Maverick Springs 7, 26-6-101, dr 1940 ft. Lake Valley Oil Co.'s Eight Mile Lake 1, se 14-20-88, 4916 ft. Carter Oil Co.'s Nowood 1, sw 5-48-90, setting cas 1825 ft; Billy Creek 2, se 17-48-82, fsh 440 ft. Riverton Petroleum Co.'s Big Sand Draw 1, 14-32-95 dr 3150 ft. M. P. Wheeler's Casper 1, 13-33-80, sd 1330 ft.

COLORADO

Northeastern Colorado Oil Co.'s Willard 1, 36-8-55, dr 2955 ft. Boulder Drilling Co.'s Boulder County 1, 9-1-70, dr 2015 ft. Columbia Oil Co.'s Fremont County 1, 28-18-70, sp. Repollo Oil Co.'s Boulder County 1, 33-1-70, dr 4505 ft. Mutual Oil & Development Co.'s Fremont County 1, 34-17-70, dr 2955 ft. Tidewater-Associated Oil Co.'s Rangely 1, 24-2-103, dr 3745 ft. Essok Oil Co.'s Boulder County 1, 5-1-70 dr 4000 ft. Midwest's Rio Blanco County 2, 30-2-102, fsh 2960 ft. Oliferous Oil Co.'s Fremont County 1, sw 35-18-70, dr 935 ft. Midwest's Iles 1, 22-4-92, flowing 2000 bbls from Sundance sand, td 3203 ft. C. E. Pluckett's Pueblo County 1, 30-20-63, fsh 3095 ft. Foley & Goldsworthy's Las Animas County 1, 11,30-60, sd 990 ft. Canon City Oil Syn.'s Fremont County 1D, 34-18-70, dr 130 ft; Fremont County 1K, 33-18-70 rig completed. Mojada Oil & Gas Co.'s Fremont County 1, 21-20-6o, small show of oil, td 1660 ft.

NEW MEXICO

Delmar Oil Co.'s Chaves County 1, 22-11-26, dr 1975 ft. Midwest Refining Co.'s McKinley County 1, 1-17-9, dr 1685 ft; Quay County 1, 30-8-31, dr 2135 ft. Arena Oil Co.'s Chaves County 1, 24-12-30, wosr. Homilton Petroleum Co.'s Eddy County 1, 12-19-26, sd, td not given. Cap Rock Oil & Gas Co.'s Lea County 1, 11-16-32, setting 10 in cas 1012 ft. Hasson Petroleum Co.'s Curry County 1, 22-8-36, wosr. Inglefield & Bridges' Lea County 1, 4-17-34, showing for commercial production, td 4755 ft. Henderson-Dexter-Blair's Lea County 1, 34-17-33, sd 4688 ft for repairs. Covert Syn.'s Lea County 1, 15-21-33, ur 1885 ft. Danciger Oil & Refining Co.'s Eddy County 1, 23-17-27, loc. Marland's Eddy County 1, 11-20-30, dr 635 ft. W. A. Stone Oil Co.'s Eddy County 1, 25-17-26, dr 877 ft. Lackawana Oil & Refining Co.'s Eddy County 7, 21-17-27, dr 2150 ft with showing of oil. Argo Oil Co.'s Quay County 1, 5-7-31, dr 1290 ft.

UTAH

Embar Oil Co.'s Moab 1, 34,25-21, dr 3222 ft. Utah Petroleum Co.'s Gibson 1, 1-30-20, setting 12½ in cas, td 1400 ft. Utah Southern Oil Co.'s Shafer 1, 17-27-30, setting 6 in cas 5245 ft, td 5292 ft. Armstrong Co.'s Crescent 1, 17-22-19, wosr, td 1220 ft. Boulder Knoll Oil & Gas Co.'s Boulder Knoll 1, 17-34-25, will set 8¼ in cas on bottom, td 1942 ft. Midwest Exploration Co.'s Cane Creek 1, 5-27-21, dr 1150 ft.

SOUTHERN CALIFORNIA

Bandini — Pan-American Pet. Co.'s Bandini 1, dr 5700 ft.

Boyle Heights—Haskell M. Green's P. A. S. F 1, sd 1400 ft.

Claremont—Claremont Oil & Gas Co.'s 1, sd 1130 ft.

Coyote — Bastanchury Ranch Co.'s test, dr 4600 ft.

Davidson City — California Well Drilling Co.'s 1, dr 5270 ft.

Downey—C. F. Ackers' Downey 1, sd 367 ft.

Eagle Rock—Calwin Oil Co.'s 1, dr 6138 ft.

El Segundo—Rider Synd.'s 1, sd 2300 ft. So. Calif. Drl. Co.'s Matteson 1, dr. 4867 ft.

Gardena—Circle Oil & Gas Co.'s 1, co. 3359 ft.

Hawthorne—Winwell Oil Co.'s Dome 1, sd 5586 ft.

Irvine—Calny Oil Co.'s Irvine 1, sd 4247 ft.

Lancaster—John B. Harding's 1, co 1860 ft.

Maywood—Magnolia Pet. Synd.'s 1, re-dr. 2690 ft.

Newhall—Geo. W. Johnson's Wickham 1, sd 2840 ft. W. W. Stabler's Castaic 1, sd 3408 ft. Temple-Lefevre's Castaic 1, sd 2107 ft.

Palos Verdes—Petroleum Securities' Weston 1, dr. 1780 ft.

Potrero—Associated Oil Co.'s Cypress 1, stg. cmt. 4450 ft. California-Eastern Oil Co.'s Cypress 1, dr. 560 ft. General Pet. Corp.'s Smith 1, prep. to abn. 4502 ft.

San Fernando—Standard's University 1, dr. 5840 ft.

San Jose Hills—Bardeen Oil Co.'s Didier 3, co. 1938 ft. D. & B. Oil Co.'s Amar 1, dr. 3620 ft.

San Juan Capistrano—O. K. Carr's 1, sd 2414 ft. Norswing-Halbertson's 1, stg 4060 ft.

Sunset Beach—General's Lomita 1, changing drill pipe 4840 ft.

Telegraph Canyon—Quadra Pet. Co.'s M. J. M. 1, stg. 4210 ft.

Topango Canyon—Standard's Austin, prep. to abn. 2503 ft.

Riverside Co.—Corona O. & G. Test's 1, sd 1550 ft. Spindletop Oil Synd.'s 1, pulling 10-inch csg. 2650 ft.

San Diego County—Oceanside Oil Co.'s 1, sd 3210 ft. Randal McGreggor's 1, stg. 1677 ft.

San Bernardino Co.—Burgess-Goodale's Riggins 1, cmt. 4110 ft. Como Oil Co.'s Cajon 1, stg. 1380 ft. Colton Terrace Oil Co.'s 1. sd 1320 ft. Del Rosa 1, cmt 705 ft. Western Pacific Oil Co.'s 3, fsh 2900 ft.

NORTHERN CALIFORNIA

KERN COUNTY

Antelope Plains—W. H. Davis' 1, dr. 3010 ft.

Bakersfield—Pacific-Eastern production Co.'s test, dr 4100 ft.

Belridge—Standard Oil Co.'s 1, material on ground. Zurich Oil Co.'s 1, dr. 210 ft.

Buttonwillow — Milham Exploration Co.'s Salisbury 1, rigging rotary.

Comanche Point—Kern 29 Oil Co.'s 1, co. 2440 ft.

Delano—Chanslor-Canfield's 1, dr 1021 ft.

Devil's Den—Marathon Oil Co.'s 1, fshg. 4390 ft. Midway-Northern Oil Co.'s 1A, running 12½-inch csg. Robins Oil Co.'s 1, stg. 2280 ft. R. H. Sayers' 1, dr 720 ft.

Elk Hills—McAdams Pet. Co.'s test, dr. 4410 ft.

Gould Hills—A. J. Bomke's 2, sd 610 ft. Carolina-Western's 1, dr 1250 ft. Mendocino-Midway's 1, sd 2930 ft. Rhoads Oil Co.'s 1, stg. 1485 ft. L. E. Westrich's 1, dr 1698 ft.

McKittrick—Abbott Pet. Co.'s 1, sd 1991 ft. Lacy-Esper Pet. Co.'s 1, sd 3260 ft. McKittrick Hills Oil Co.'s 2, dr 2670 ft. Ridge Oil Co.'s 1, running 8¼-inch csg. 3715 ft.

North Midway — Bolsa Chica Oil Co.'s 1, sd 185 ft.

Rosedale—Muroc Development Co.'s 1, dr. 360 ft.

Shale Hills — Huntington-Hawthorne's 1 sd 600 ft. Nelson & Mountford's 1, dr. 2660 ft. Oildale Oil Co.'s 1, idle 558 ft.

Sunset — Fresno-Sunmaid's 1, stg. 4200 ft. Gore Exploration Co.'s 1, dr. 4140 ft. R. H. Whisten's 1, rigging up.

Temblor Hills—Fortuna Oil Co.'s 1, fshg. 2660 ft. Hovey Hills Oil Co.'s 1, sd 2540 ft. Painted Hills Oil Co.'s 1, sd 500 ft.

Tehachapi-Mojave—C. R. Asmussen's 1, stg. cmt. 1510 ft. Crusaders Oil Co.'s 1, susp. 2284 ft. John B. Harding's 1, dr. 689 ft.

Upper Kern River—Barnes Oil Co.'s 1, prep. to drill ahead 1356 ft. Commerce Oil & Leasing Co.'s 1, sd 2508 ft.

Upper Poso Creek — Dr. Buchner's 1, dr. 1065 ft.

FRESNO COUNTY

Clovis—Fresno-Madera's 1 sd 3760 ft. W. W. Taylor's 1, stg. 2100 ft.

Jacalitos Dome — Marland Oil Co.'s 3, dr 3720 ft.

Wartham—Bald Mountain Drlg. Co.'s 1, sd 905 ft. Progressive Oil Synd.'s 1, sd 1105 ft.

Rasin City—Fresno-United Oil Co.'s 1, sd 3961 ft.

KINGS COUNTY

Kettleman Hills — Ahlburg Gasoline Corp.'s 1, sd. Associated's Smith 1, sd 2043 ft. Bolsa Chica Oil Co.'s 1, stg 2360 ft. Chanslor-Canfield's 1, dr 1778 ft. General's 1, fsh 3105 ft. Milham Explo. Co.'s 1, dr 1220 ft. Hugh McPhail's 1, stg 1972 ft. South Coalinga Oil Co.'s 1, dr 2125 ft.

VENTURA COUNTY

Camarillo—Standard's Camarillo 1, r 4926 ft. Calif. Pet. Corp.'s Arniel 1, fsh 2259 ft.

Casitas-Ojai—Miley Explo. Co.'s Casitas 2A, sd 568 ft.

Fillmore — Sespe Oil Co.'s Smith 1, sd 4003 ft.

Moorpark—E. A. Parkford's Lloyd 1, dr 2390 ft. Shell Co.'s Berlywood 1, dr 2697 ft.

Montalvo—Standard's 1, dr 5052 ft.

Piru—Superior Oil Co.'s Pena 1, dr 3320 ft.

Rincon—Montecito Oil Prod.'s 1, stg 3200 ft.

Santa Paula — Null Dev. Co.'s Anlauf 1, dr 880 ft.

Ventura District — Associated's Dabney-Lloyd, dr 370 ft. Chanslor-Canfield's Hobson 1A, dr 6000 ft; Hobson 1B, stg cmt 3610 ft. Milham Explo. Co.'s Sexton 1, cutting out pipe 4420 ft. Rio Grande Oil Co.'s Canet 1, dr 4945 ft. Star Pet. Co.'s Canet 1, fsh 3210 ft.

SANTA BARBARA COUNTY

Santa Barbara—Channell Oil & Dev. Co.'s 1, re-dr. 4820 ft. Hollywood Oil Corp.'s Sudden 1, sd 1280 ft.

Summerland—Summerland Oil Co.'s Becker 1, dr 2746 ft.

San Luis Obispo County—Barneyberg Oil Corp.'s 1, sd 4500 ft. Brinkman Oil Co.'s 1, sd 760 ft. Mapes Holding Co.'s 1, sd 560 ft. Painted Hills Oil Co.'s 1, dr 1045 ft. Richfield Oil Co.'s 1, dr 135 ft. Walkin Pet. Co.'s 1, sdtr dr pipe 2175 ft.

Monterey County — Petroleum Securities' 1, dr 1948 ft.

Tulare County—Ducor Drlg. Co.'s 1, re-dr. 4161 ft. Federal Explo. Co.'s 1, dr 5422 ft. J. W. Grafford's 1, sd 2530 ft. Ozena Oil Co.'s 1, sd 2300 ft. Wm. Resser's 1, prep to resume dr 1815 ft.

Sonoma County—Shell Co.'s 1, dr 4833 ft.

Alameda County—J. E. Burney's 1, dr 1167 ft. Clahoma Oil Co.'s 1, dr 930 ft. Talbot Oil Co.'s 1, dr 376 ft. Thomas & Hammill's 1, dr 1025 ft.

Colousa County—Amalgamated Oil Co.'s 1, re-dr 2844 ft. Brown & Cockerill's 1, dr 720 ft. Continental's 1, re-dr 3800 ft. Prize O. & G. Co.'s 1, stg 845 ft.

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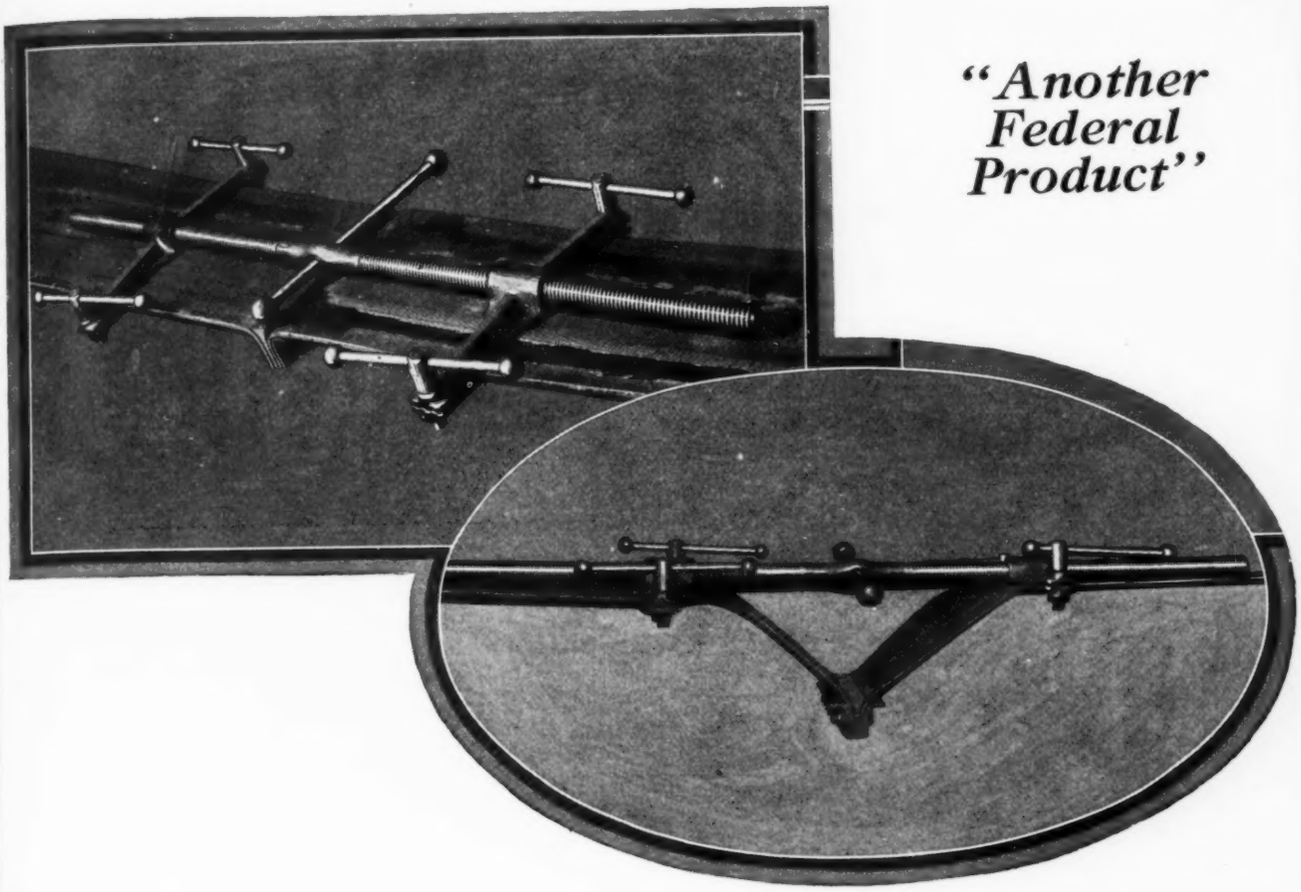

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EAST TEXAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
Marion County—		
Interior Oil Co, Stallcup 3, Mays Hrs	*	1670

Harrison County—Waterman Drlg. & Dev. Co.'s Hickman 4, set 6 in at 905 ft. Sabine Drlg. & Dev. Co.'s Williams 1, dr 1950 ft.

Marion County—Morefield et al's Stiles 1, set 6 in at 2150 ft.

Panola County—Magnolia's Steele 5, tested sw 2330 ft; Tiller 4, loc; Johnson 6, wosr 1927 ft.

Shelby County—Arkansas Fuel Oil Co.'s Bouland 1, r 3200 ft. Clark & Melat's Pickering 1, dr 2639 ft.

TEXAS PANHANDLE

Completions

Company, Well and Location	Initial Production Bbls.	Depth
Hansford County—		
T. F. Caldwell et al, J. Adriance 1	*	585
Oklavania Oil Co., J. T. Whitson 1	*	3510
Hutchinson County—		
Globe O. & R. Co., J. Q. Bost 1..	*	500
Vitex Oil Co., W. F. Allen 1.....	*	540
Lipscomb County—		
W. E. Everett et al, H. D. May 1	*	960
Potter County—		
Greater Amarillo O. Co., Townsite 1	*	2020

WEST TEXAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
Concho County—		
Mullens-Davis et al, Martin 1.....	*	2274
Crane County—		
Marland-Zoch & McCamey, Cowden 1	*	3461
Pecos County—		
Buell-Hagen et al, University 1, shot	*	3008
Val Verde County—		
Transcontinental O Co., Stevenson 1	†	4412
Winkler County—		
Southern Crude Oil Pur. Co., Hendricks 1-C 1105		2948

Andrews County—Amon G. Carter & Henry Zweifel's Cowden 1, elev 3156 ft, top salt 1375 ft, sd 1530 ft. J. S. Cosden et al's Ratliff-Bedford 1, materials. Calvin-Belt et al's Ratliff-Bedford 1, lcn. Deep Rock Oil Co.'s W. J. Harris 1, elev 3168 ft, rig. Maer-Staniforth et al's Taylor-Meador 1, top salt 1650 ft, show non-inflammable gas 2065 ft, dr 2285 ft. C. B. McKinnon et al's J. S. Means 1, machine.

Borden County—Stivers & Guthrie's Snodgrass 1, ur 10 in. 1000 ft. J. L. Kennedy et al's J. S. York 1, lcn.

Coke County—Lipan Oil Co.'s S. M. Conner 1, elev 2045 ft, sd 730 ft.

Concho County—Harry Adams et al's Price 1, spd and sd. Arkansas Fuel Oil Co.'s Hartgrove 1, dr 2760 ft. Associated Pet. Co.'s Sam Waring 1, elev 2085 ft, fsh 2300 ft. Gene Mays et al's Hartgrove 1, sd 1595 ft. The Exploration Co.'s Wilson-Hartgrove 1, elev 1618 ft, ur cas 1680 ft.

Crane County—Geo. Church & Fields' University 2, rig; University-Duoll 1, top salt 1016 ft, dr 1290 ft. Church & Bort Weekly's University 2, rig. Carl Cromwell & Pickrell's University 5, rig. Eastland Oil Co. & Collett-O'Keefe's University 2, elev. 2751 ft, top salt 1100 ft, set 6⅝ in. 2773 ft; University 5, 6 and 7, lcns. Gulf Prod. Co.'s Crier-McElroy 6, top salt 1040 ft, dr 1385 ft; Crier-McElroy 4-A, top salt, 972 ft, dr 1475 ft; J. T. McElroy 8, elev 2589 ft, top salt 965 ft, top lime 2655 ft, dr 2660 ft; McElroy 9, elev 2556 ft, top salt 1000 ft, dr 2565 ft; McElroy 1-B, elev 2585 ft, top salt 1220 ft, top lime 2900 ft, flowing 95 bbls oil 2923-54 ft; University 3, elev 2599 ft, top salt 1160 ft, top lime 2893 ft. dr with hfo at 2974-3031 ft; University 5, elev 2603 ft, top salt 1220 ft, top lime 2915 ft, dr 2980 ft; University 6, elev 2597 ft, top salt 1210 ft, top lime 2951 ft, dr lime 3125 ft; University 7, elev 2597 ft, top salt 1235 ft, top lime 2911 ft, dr oil pay 2989-3005 ft; Waddell 1-A, dr 880 ft. Humble's University 5, elev

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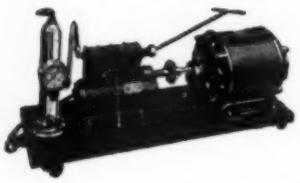

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2587 ft, top salt 1120 ft, flowed 390 bbls oil, dr pay 2835-2933 ft; University 6, elev 2565 ft, top salt 1180 ft, dr 2780 ft; University 7, elev 2589 ft, top salt 1130 ft, dr oil pay 2905-10 ft; University 8, elev 2580 ft, top salt 1160 ft, dr 2650 ft; University 9, sp. Independent O. & G. Co.'s University 1-A, elev 2555 ft, top salt 1095 ft, flowed 2100 bbls oil 2841-2925 ft; University 2-A, top salt 1025 ft, dr 2150 ft. Magnolia's University-Hardwick 2, elev 2566 ft, top salt 1065 ft, dr 2795 ft; University-Hardwick 3, 7 and 8, rigs; University Hardwick 6, dr 1025 ft; University-Lassiter 3, rigs; University-O'Keefe 6, dr 1550 ft; University-O'Keefe 7, elev 2591 ft, top salt 1270 ft; dr 2250 ft; University-O'Keefe 9, dr 995 ft. Prairie's University 6-A elev 2590 ft, top salt 1140 ft, flowing 80 bbls oil and fsh tools 2965-3015 ft; University-Lassiter 1, elev 2585 ft, top salt 1210 ft, dr in pay 2875-85 ft. Simms Oil Co. & Atlantic Oil Prod. Co.'s University 5-A, elev 2582 ft, top salt 1045 ft, dr pay 3000 ft; University 6-A, elev 2561 ft, top salt 980 ft, dr 2790 ft; University 7-A, elev 2572 ft, top salt 1050 ft, dr 2780 ft; University 8-A, rig; University 1-C, elev 2583 ft, top salt 1115 ft, flowed 275 bbls after shot 30 qts at 2850-66 ft, td 2946 ft; University 2-C, dr 785 ft; University 3-C and 4-C, lcns. University 1-D, elev 2564 ft, top salt 1010 ft, flowed 775 bbls, fsh tools in pay 2804-55 ft. Texas Co.'s University 1, top salt 1030 ft, dr 1860 ft. Tidal Oil Co. & Turman-Maxwell's University 4-F, elev 2565 ft, top salt 1060 ft, dr 2930 ft; University 1-H, dr 1015 ft; University 2-H, top salt 1145 ft, dr 1450 ft.

Crockett County—V. T. Bolin et al's P. O. Coates 1, sd 930 ft. Cumberland et al's Couch 1, sd 3075 ft. W. W. Donnelly & J. D. Young's Pierce 1, elev 2105 ft, dr 1240 ft; Shannon 1, machine. George A. Henshaw & Co.'s University 1, elev 2297 ft, top salt 450 ft. top lime 1697 ft, ur 8¼ in 1870 ft. J. K. Hughes Dev. Co.'s Powell 2-B, sd 2535 ft. Magnolia's Shannon 2, elev 2670 ft, top salt 925 ft, top lime 2270 ft, dr 3350 ft. Wm. Schaffer et al's University 2, rig. P. H. Williams et al's Powell 1, top salt 1050 ft, dr 110 ft. World Oil Co.'s Schneeman 1, elev 2632 ft, top salt 1035 ft, top lime 2280 ft, fsh junk 2575 ft. J. D. Young & Cromwell's University 1, dr 2005 ft.

Crosby County—El Capitan Oil Co.'s Slaton 1, elev 2854 ft, top salt 1270 ft, sd 3300 ft.

Culberson County—Jas. Gardner et al's Radford-State 1, sd 385 ft.

Jeff Davis County—Humble's C. Flores 1, rig. J. K. Hughes Dev. Co.'s Means 1, sd 1970 ft.

Ector County—J. S. Cosden et al's Connell 2-A, sd 690 ft; Connell 3-A, sp. The Exploration Co.'s Slator 1, elev 3257 ft, top salt 1575 ft, top lime 4115 ft, sd in lime 4435 ft.

Fisher County — Barbour Oil Co.'s W. A. Cross 1-A, dr 1605 ft. California Co.'s Anderson 1, elev 1915 ft, dr 3265 ft; Magenheimer 1, elev 2004 ft, sd 3550 ft. Hucony Gas Co.'s Langford 1, elev 2201 ft, sd 3187 ft. Ideal Oil Co.'s Jameson 1, dr 485 ft. Marland Oil Co.'s Hodges-Rochelle 1, ur 3598 ft. Marland & Texon Oil & Land Co.'s McCall 1, rig. Fred Phillips et al's C. M. Webb 1, elev 1811 ft, sd hfw 2715 ft. R. W. Rainey et al's Marberry 2, sd hfw 2725 ft. Sinclair's J. A. Denise 1, sd 565 ft. Stearnes & Streeter's W. A. Howe 1, sd 3185 ft. F. P. Zoch & McCamey et al's Clayton 1, elev 2135 ft, cavey hole 3725 ft; Lanius 1, dr 3550 ft.

Garza County—Emerald Oil Co.'s Boren 1, sd 2212 ft. Pandem Oil Corp.'s Justice 1, rig.

Glasscock County—Green et al's Oxshear 1, sd 200 ft. Merriwether & World Oil Co.'s McDowell 1, rig. R. P. Penn & Julian Pet. Corp.'s Edwards 1, sp.

Tom Green County — Marland Oil Co.'s Llano County Fee 1, set cas 1538 ft. Fitzgerald & Taliaferro's Bennett 1, rig.

Hockley County—El Capitan Oil Co.'s Ellwood 1-A, sd 1005 ft.

Howard County—Bowers et al's C. Jones 1, spd and sd. Bristow & Merrick's Hooks 2, dr 1655 ft; Hooks 3, dr 265 ft. Fred Carey et al's Chalk 1, sd 250 ft. W. W. Donnelly & Mann's Martin 1, dr 1520 ft. F-H-E Oil Co.'s Roberts 1, sp. Gulf's Chalk 3, rig.

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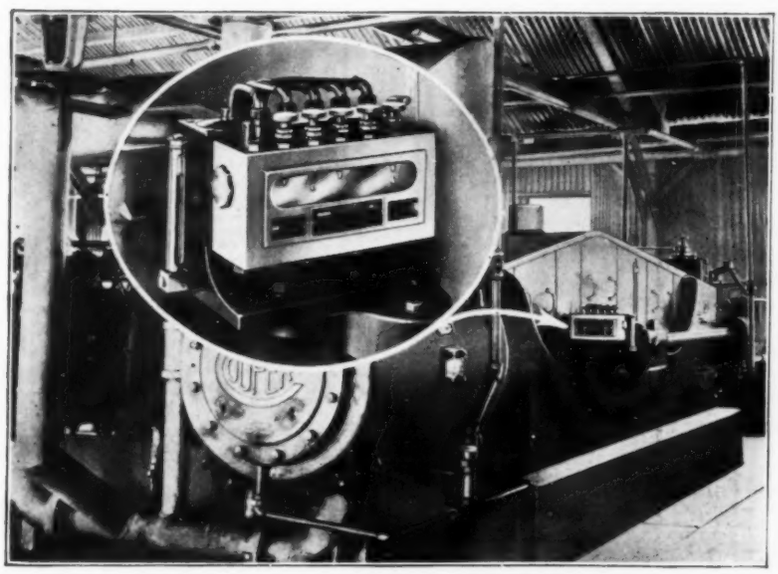

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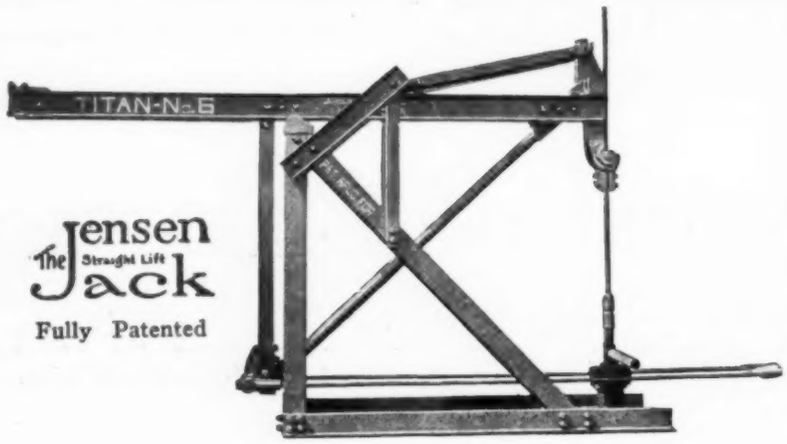

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Hudspeth County—Lockhart & Co.'s Gardner-Moseley 1, spd and sd.

Irion County — Cachdollar-Whitemire's Abe Meyer 1, elev 2050 ft, sd 2505 ft; Bird-Roberts 1, elev 2065 ft, sd 1085 ft.

Jones County—Atlantic & Landreth's Howell 2, missed pay, sd 2665 ft. Bateman & Campbell's Southard 1, fsh 1990 ft Gault Brown et al's Mrs. Zips 1, dr 1320 ft. E. P. Campbell et al's Herndon 1, sd 1850 ft. Cole-Hart et al's Cranston 1, dr 3110 ft. Consolidated Oil Co.'s Armand-Taylor 1, ur 8¼ in 1940 ft. Garland & Diamond's Glynn 1, lcn. Hurley Oil Co.'s (Gibson-Johnson) John Sears 2, bailed oil 2496-99 ft, sd 2515 ft; Largent 1, sd 2560 ft. Gillette & Hickey et al's S. W. King 1, sd 2090 ft; M. E Young 1, sd 1200 ft. Grisham-Hunter & Wildman Pet. Corp.'s Mrs. F. G. Phillips 1, elev 1820 ft, sd hfw 3000 ft; Williams 1, dr 2680 ft. Hutson & Weaver's Smith 1, sd 700 ft. Kirk & Brewer's Milsap 1, dr 1345 ft. Marsten Oil Co.'s Howell 1, ur 8¼ in 2415 ft; Swann 1, dr 1040 ft. Mid-Continent Pet. Corp.'s H. Evans 1, sd 2360 ft Vic H. Martin et al's Culberson 1, probably abn 3240 ft. Stebbins O. & G. Co.'s J. M. Higgs 1, swab 35 bbls oil 1599-1604 ft, will pump. W. G. Stough et al's J. P. Willis 1, co 730 ft. Phillips Pet. Co.'s Howell 1, lcn; Joe Winters 3, rig; Winters 4, dr 1050 ft; Thornton 1, fsh 2826 ft; Tessie-Walling 4, dr 2095 ft; Tessie-Walling 5, lcn; Vestal 1, lcn Swensondale Oil Co.'s Canton 1, dr 1120 ft. J. L. Tomberlin et al's Clapp 1, machine. World Oil Co.'s Clark 1, dr 2945 ft; Boyd 1, dr 2210 ft. Zeigler et al's Reeves 1, sd 1750 ft.

Kent County—Douglas Oil Co.'s Scoggins 1, sd 1050 ft. Marland & Texon's Bilby 1, lcn.

King County — Gibson-Johnson's Burnett 1, dr 1015 ft. Mid-West Explo. Co.'s Patton 1, sp. Phillips Pet. Co.'s Burnett 1, dr 1975 ft. Sinclair's Burnett 1, dr 210 ft. J. L. Pattison et al's Patton 1, sd 1280 ft. White Eagle's Burnett 1, dr 1150 ft.

Loving County—Owen-Sloan et al's Johnson 1, spd and sd. Kingwood Oil Co.'s Moore 1, rig.

Mitchell County—Magnolia's Mary Foster 4 dr 2910 ft; T. L. McKinney 1, dr 1850 ft; W. W. Watson 2, dr 2900 ft. Morrison-Thompson's Griffin 1, showing oil, dr 2835 ft. Paul Teas et al's Ed Strain 1, dr 2315 ft. Robt. Thraves et al's C. Way 1, rig. B. E. Walters et al's Dollen 1, sd hfw 3955 ft.

Nolan County—A. G. Malone et al's Carlyle 1, lcn; McElmurray 1, spd and sd. Hert Oil Co.'s Pepper 1, rig. Phillips Pet. Co.'s Scott 1, dr 1400 ft. Thomas & Reynolds' Allen 1, dr 1720 ft. Stein et al's Ross 1, lcn., abn. Walford et al's Simpson 1, lcn abn. John H. Winemille Corp.'s W. L. Booth 1, sd 950 ft. Henry Zweifel et al's Longbotham 1, sd 1310 ft.

Pecos County — Arkansas Fuel Oil Co.'s Manly Holmes 1, elev 2507 ft, top salt 640 ft, dr 1200 ft. Buell-Hagen et al's Jasper 1, lcn. Southern Life-Batchelor 1, elev 3136 ft, sd 2045 ft; University 1, dry after shot

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240 qts at 2450-80 ft, td 3008 ft; McKenzie 1, sd 725 ft. Carl Cromwell & Kimberlin's Blackman-Scharff 1, elev 2402 ft, top salt 890 ft, sd 1400 ft. T. R. Crowell's J. C. Trees 1, elev 2545 ft, top lime 2875 ft, re-run 6⅝ in 3115 ft. California Co.'s Cordova Union Fee 1, elev 2615 ft, salt at 834-50 ft, flowing 5000 bbls sulphur water 1737-52 ft. John Dropplemen et al's Hersheusen 1, dr 1155 ft. Del Rio Synd.'s Perry 1, sd 740 ft. Garland & Mott's El Paso Fee 1, lcn . Kershaw & Livingston's Cannon 1, lcn. Geo. A. Henshaw & Co.'s I. G. Yates 1, top salt 525 ft, dr 550 ft. Humble & Kirby Pet. Co.'s J. F. McElroy 1, rig. Mid-Kansas & Transcontinental's I. G. Yates 4-A, 445 ft; Yates 1-C, dr 325 ft; Smith-Taylor 1, dr 215 ft. Texon Oil & Land Co.'s I. G. Yates 2, top salt 430 ft, dr 450 ft; Yates 3, lcn. Texon & Marland Oil Co.'s Blakesley 1, dr 370 ft. Quinby Oil Co.'s A. A. Gray 1, dr 470 ft; Bennett 2, dr 1435 ft; Townsite 1, sd 3435 ft. World Oil Co.'s M. Serf 1, machine.

Presidio County—Hadlock & Miller's Tootle 1, co 2255 ft.

Reagan County—The Texas Co.'s J. D. Sugg 2, elev 2549 ft, top salt 860 ft, top lime 2290 ft, dr 2925 ft. Tidal Oil Co.'s University 1, dr 785 ft.

Reeves County—Deep Rock Oil Co.'s Caldwell 1, dr 3400 ft. Humble's T&P Fee 1, dr in sulphur water 1760-1800 ft. The Eplo. Co.'s A. A. Kinney 1, spd and sd. World Oil Co.'s Biggs-Holder 1-A, dr 610 ft.

Runnels County — Ladd-Hill & Yates' McMillan 1, dr 880 ft.

Scurry County—Northwest Co.'s Stinson 1, dr 4155 ft.

Sterling County — P. H. Williams et al's Clark 1, dr 955 ft.

Stonewall County—Geo. A. Henshaw & Co.'s Brown 1, lcn. F. P. Zoch & McCamey's Ward 1, set 12½ in 500 ft.

Taylor County—Gibson-Johnson's J. F. Hendry 1, dr 1090 ft. Grisham-Hunter Corp.'s Huddleston 1, ur 2585 ft. Humble's Mattie Jacobs 1, dr 1530 ft. Halbert et al's Hunt 1, dr 1570 ft. Dorning & Perrine's J. A. Hammer 1, sd 455 ft. Mid-West Explo. Co.'s Dora Smith 1, dr 1785 ft; Toombes 1, sd 1985 ft. Mitchell & Breene's Tittle 1, lcn. Morrison & Thompson's Rose 1, dr 1715 ft. Owen-Sloan et al's Latimer 1, sd 635 ft. Roeser-Pendleton Inc.'s Sam Butman 1, sd 710 ft. Sanger O. & R. Co.'s Ike Brown 1, sd 1900 ft; Gillespie 1, dr 4105 ft. World Oil Co.'s J. R. Griffin 1, dr 655 ft.

Terry County—Kingsland Oil & Potash Co.'s Brownfield 1, dr 1205 ft.

Upson County—Hults-Curtis et al's Giddings 1, sd 3615 ft. Beatty et al's Lane 1, Elev. 2677 ft, top salt 880 ft, show oil 2260-65 ft, sr 2440 ft. W. W. Donnelly & Marland's University 1, Elev. 2884 ft, top salt 1550 ft, dr 3170 ft. Prairie's Lane 1-C, Elev. 2506 ft, top salt 465 ft, top lime 1845 ft, dr oil pay 1871 ft. Snowden & McSweeney's Hughes 1, Elev. 2679 ft, top salt 585 ft, top lime 2132 ft, flowing by head and sd for storage 2326-27 ft.

Val Verde County—Douglass Oil Co.'s Sellars 1, dr 2435 ft. Magnolia's W. E. Whitehead 1, rig. S. A. McCaskeys' Sellars 1, fsh 2525 ft. O. O. Owens et al's Mills 1, dr 1535 ft. E. T. Williams et al's Holman-McNutt 1, fsh 2605 ft.

Ward County—Marland et al's Jennie Sealy 1, Elev. 2820 ft, top salt 1070 ft, dr 2835 ft.

Winkler County—Champlin Ref. Co. et al's Cowden 1, dr 1275 ft. Gulf's Hendricks 2, 3, 4 and 5, dks sd by agreement. Hill-Simon & Ladd's Ambrugey 1, Elev. 2995 ft, top salt 1220 ft, sd 3447 ft. Humble's Hendricks 1, rig; Hendricks 1-A, dr 310 ft. Independent O. & G. Co.'s Hendrick 1, Elev. 2804 ft, top salt 2375 ft, top lime 2720 ft, cem 6⅝ cas 2815 ft making five million gas and lite spray oil 2797-2825 ft. Llano Oil Co.'s Scarborough 1, Elev. 2921 ft, salt at 1115-2640 ft, top lime 2675 ft, set cas 2671 ft. McCullough & Marland's Tobe Morton 1, dr red rock 1705 ft. R. S. Matthews et al's Cowden 1-A, sd 200 ft. Pure Oil Co.'s Central State Bank 1, dr 450 ft. Skelly Oil Co.'s M. M. Leeman 1, Elev. 2951 ft, top salt 1167 ft, dr salt 3100 ft. Southern Crude Oil Purchasing Co.'s Hendricks 1-C, Elev. 2801 ft, top salt 1910 ft, top lime 2597 ft, flowed 1105 bbls 28.8 gravity oil

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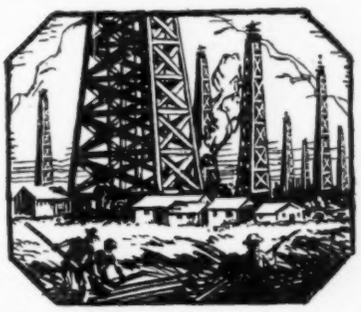

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initial at 2908-48 ft; Hendricks 2-C, Elev. 2824 ft, top salt 1901 ft, stdz 2553 ft; Hendricks 3-C, dr 1805 ft; Hendricks 1-B, dr 670 ft. White Eagle O. & G. Co.'s R. A. Leck 1, materials. Texon Oil & Land Co.'s Central State Bank Fee 1, rig.

SOUTHWEST TEXAS

Bexar County—McClanahan's Sodrock 3, dr.

Caldwell County—Fred Adams et al's Ellison 1, Richard sur, dr. United North & South's Kelly 1, dr; Tiller 1, dr. Van Keuren Oil Co.'s Rideout 1, swabbing.

Duval County—Associated's Sutherland 1, dr. Humble's Singer 11, dr; Singer 12, dr 2458 ft; Walsh 7, dr; Schallert 5, dr; Welder-Woods 2, dr 991 ft. Magnolia's Spear 1, dr; Benavides 2, dr 3501 ft. Geo. Marshall's 1, sec 458, testing. Maruer & Duggan, Hoffman 1, dr. Schlesinger et al's 1, sec 76, bailing. E. St. Alban's Puig 2, dr.

Gonzales County—Martin Oil Co.'s Preston 1, dr. Kerchival et al's Billings 2, dr.

Zapata County—Buffalo-Erie's F. Martinez 3, dr. Charco Redendo's Garcia 65 and 66, dr. Hill et al's Villa Grant 1, dr. O. W. Killam's Lange 1, dr. Duke Langford's Charco Redendo 1, dr; Martinez 1, dr. Staggs et al's Hinnants 1, dr. Mission Oil Co.'s Slator 1, dr. Magnolia's Jennings 5, dr; Cuellar 4, dr. Texas Co.'s Jennings 5, made Halliburton test at 1460 ft, made oil well, casing will be cemented.

TEXAS GULF COAST

Completions

Brazoria County—		
Texas Co., Sweeny 2	*	1260
Roxana, Reese 2	*	2004
Fort Bend County—		
Gulf, Davis 24	*	1058
Jefferson County—		
Gulf, Bordages 2,	*	5299

AUSTIN—Raccoon Bend—Humble's Washington 1, dr 1063 ft, gbo and lime; Bellville School 1, dr 2253 ft, sand; Reese 2, dr 1492 ft shale and lime; Austin College 2, dr 1933 ft shale and lime; Austin College 3, set and cemented 1080 ft; Deutrich 1, loc; Woodley 1, loc.

Bellville—Greene, Morgan & Mewis' Mewis 1, dr 740 ft, gbo.

Hickory Mound—R. E. Graves et al's Cleveland 1, dr 1080 ft, shale.

BRAZORIA—**Allen Dome**—Roxana's Allen 3, dr 5695 ft, shale; Allen Bernard River 1, resumed dr 5051 ft; Reese 2, abn 2004 ft sandy gbo.

Clemens Dome—Roxana's Clemens 4, dr 4207 ft, hard sand; Pabst 2-A, dr 4687 ft sandy lime and shale.

Stratton Ridge—Gulf's Perry 2, dr 1929 ft, shale. Pure-Humphreys' Armstrong 1, dr 2910 ft. Texas Co.'s Sweeney 2, n of Danbury, abn 1260 ft gbo. Associated's Seaburn 1, dr 2995 ft gbo. Staley et al's Glover 1, Anchor dr 653 ft shale.

FORT BEND—**Boling**—Texas Co.'s Farmer 2, dr 4195 ft, shale and lime.

Long Point—Gulf's Trone 2, dr 997 ft lime rk; Davis 24, abn 1058 ft gyp; Beard 4, dr 2768 ft; Wolfe 2, dr 808 ft cap rk.

GOLIAD—Houston Oil Co.'s Parks 2, 8 mi e Goliad, dr 3416 ft.

HARDIN—Texas Co.'s Le Jarza 3, e Batson dr 4690 ft hard sand. Homestake Oil Co.'s 1, Sour Lake, dr 1775 ft, gbo.

HARRIS—P. S. Griffith's Fee 3, 12 mi n Houston, fsh 3115 ft. Humble's Warren 1, Hockley, dr 936 ft, gbo. Atlantic-Simms' Burt-Griffith 1, 3 mi n Humble, dr 3455 ft lime.

JEFFERSON—Houston Oil Co.'s Fitzhugh 1, Big Hill, dr 390 ft gb. Fannett-Gulf's Bordages 2, abn. 5299 ft heaving shale; Bordages 3, dr 4725 ft, sand. Texas Co.'s Garrick 1, ½mi n Spindle Top, dr 1722 ft gbo. Rio Bravo's T & N O 101, ½ mi n Spindle Top, dr 3590 ft lime. J. O. Davis et al's Gladys 1, 1 mi w Spindle Top, dr 5120 ft, gbo. Hines Oil Co.'s Roberts 2, ½ mi e Spindle Top, dr 3770 ft, shale. Edmund Tstee's Port Acres 1, 2 mi nw Port Arthur, dr 2255 ft, sand.

LIBERTY—Liberty Bell Oil Co.'s Humphrey 1, 1 mi n Liberty, dr 400 ft clay.

MATAGORDA—Hawkinsville-Gulf's Craig 8, dr 4266 ft lime; Parkinson 2, dr 1367 ft gyp; Parkinson 3, loc; Sanborn 3, dr 1698 ft, sand and shale.

ORANGE—J. T. Miller Drlg. Co.'s Brown-Ocultree 1, Gum Island, dk. W. C. Wells' Strak 2, dr 130 ft, clay.

WASHINGTON—**Brenham**—C. A. DeWare's Lehmann 1, dr 2605 ft shale; Schurenburg 1, sd 1530 ft, rk. Pratt-Hewitt Oil Co.'s Konieczny 2, dr 2110 ft.

WHARTON—Texas Co.'s Felder 3, Boling, dr 4570 ft hard sand.

PERMITS

(Continued from page 76)

ARKANSAS

Grant County—Shaffer Oil Co., Long Bell 1, 36-5-12, 330 ft s and 330 ft e of nw of ne.

Ouachita County—Marine Oil Co. (wo), Umsted 7, 5-16-15, nw e½ lot 1 of ne.

Union County—Lion Oil Ref. Co., Murphy H-2, (wo), 9-16-15, c of e line w½ se nw. Lyall et al, Stegall 1, 11-17-13, sw ne sw. J. J. O'Brien, Saxon 1, 16-16-16, se w½ nw ne.

KANSAS

Butler County—Rogers et al, Drum Bitler 15, ne nw se 20-26-8; Drum Bitler 16, sw se 20-26-8 Federal, Drum Bitler 11, c n l ne ne 31-26-8.

Chase County—Phillips, Lipps 1, c ne sw 29-18-7.

Greenwood County—Rhodes et al, Broddock 2, nw 23-22-12. Aikman et al, Pavemire 1, sw ne ne 22-22-13. Tidal, Hull 31, c e l ne se ne 34-25-8. Wilson et al, Olsen 1, c se nw 28-26-9.

Marion County—Sinclair, Bevans 1, ne se 21-17-4.

Reno County—Slick et al, Dutton 1, ne sw 25-26-9.

MOUNTAIN STATES

WYOMING

Associated Producers, La Barge 1, 32-27-113.

COLORADO

Continental Oil Co., Florence 587, nw 2-19-70; Florence 588, nw 36-18-70; Florence 589, se

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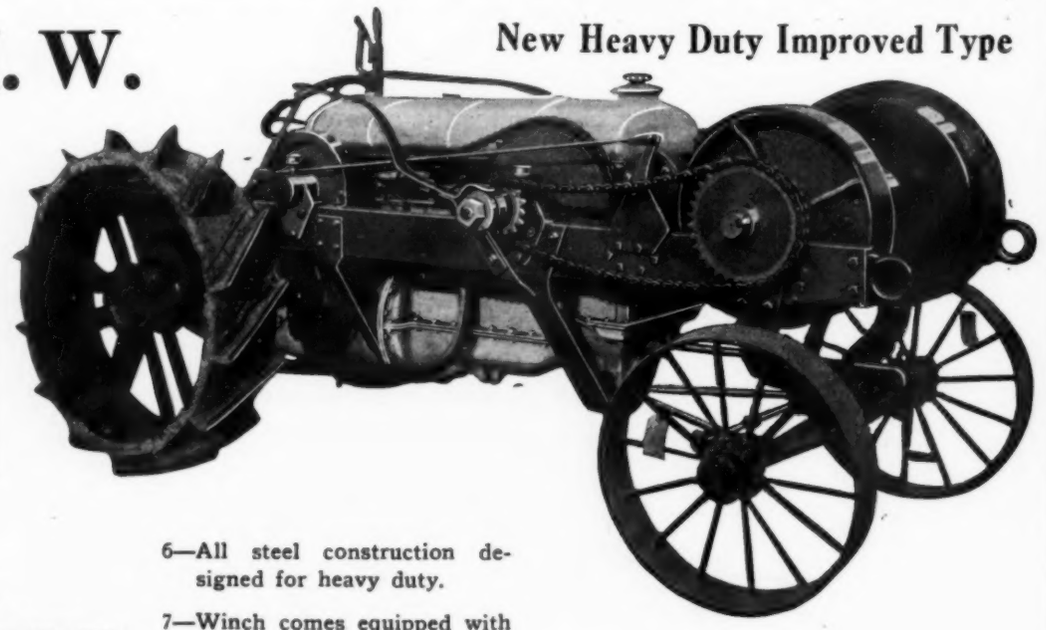

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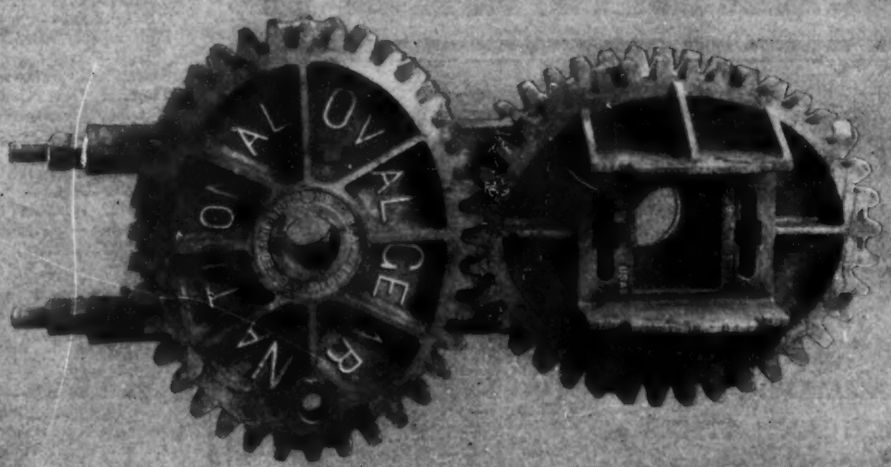

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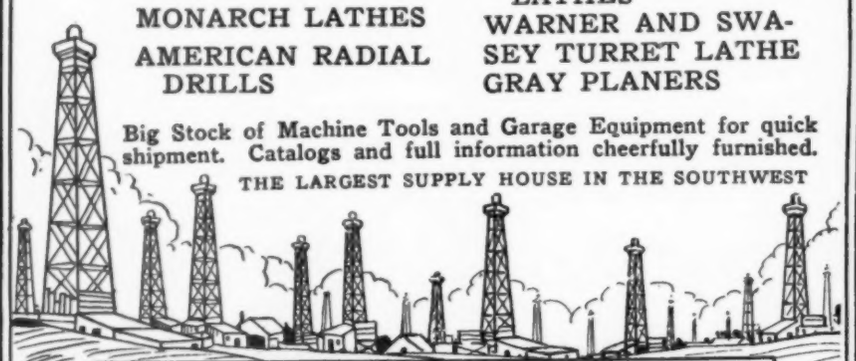


PEDEN IRON & STEEL CO.
HOUSTON – SAN ANTONIO – SHREVEPORT

35-18-70; Florence 590, se 35-18-70. Travis-Raddatz Synd., Fremont County 1, ne 35-18-70.

NEW MEXICO

Danciger O. & R. Co., Eddy County 1, se 23-17-27. Prairie Oil & Gas Co., Eddy County 1, se 12-18-27.

MONTANA

Adams Oil Co., 5, nw 33-35-2. Fulton Oil Co., 25, nw 31-35-1; No. 26, nw 21-35-1. Homestake Explo. Co., 8, ne 4-35-2; 6, ne 9-35-2; 3, nw 23-35-2. Calpet Oil Co., 16, se 27-35-2. Hill Oil Co., 6, se 28-35-2. Carter Oil Co., 5, nw 11-35-2. Diamond Oil Co., 1, nw 33-35-2. Crumley Oil Synd., 6, nw 34-35-2.

COMPLETIONS

(Continued form page 70)

SOUTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
Edgerly—		
Rex Pet. Co., Hunter 5	200	4000
Evangeline—		
E. L. Meyers, Armandet 5	150	1500
Lockport—		
Vacuum-Gulf, Farquahar et al 4 "A"	1000	4400
Bordages 2, wo	*	5500
Miller 14	2000	4400

TEXAS

GULF COAST

Spindle Top—		
Gulf, Jeanette Mann 4, wo	120	2700
Walker Oil Co., Quinn 1, wo	*	5400
Yount-Lee, Fee 24	3400	6300
Batson—		
Gulf, Choate 65	10	1150
Goose Creek—		
Gulf, Beaumont Pet. Co. State 24, wo	100	2700
Sour Lake—		
Humphreys, Gordon 1	*	3800
Hull—		
Gulf, J. C. Baldwin 19	700	3200
Phoenix Dev. Co.85	4000	3400
Humble, Merchant 1, wo	10	4150
South Liberty—		
Texas Co., Simms 4, wo	*	3550
Associated, Hirsch Conley 1	560	3750
Nash Dome—		
Rycade, Wisdom 13	350	3700
Orange—		
Gulf, M. Granger 3	382	4400

SOUTHWEST TEXAS

Caldwell County—		
Magnolia, Tabor 27	110	2132
Alf 17	25	2104
Slubert 15	20	2104
Duval County—		
Cole Pet. Co., Benavides 40	¶	1720
Magnolia, Benavides 1	¶	1735
Hohl 1	¶	4090
Jim Hogg County—		
Grayburg Oil Co. Weil 16	20	1312
Weil 17	30	1316
Magnolia, Martinez 35	¶	2046
St. Alban, Edward 6	100	2139
Crown Central, Bruni 21	30	1731
Houston Oil Co., Benavides 1-A	¶	1630
Sun Co., Bruni 14	20	1667

EAST TEXAS COMPLETIONS

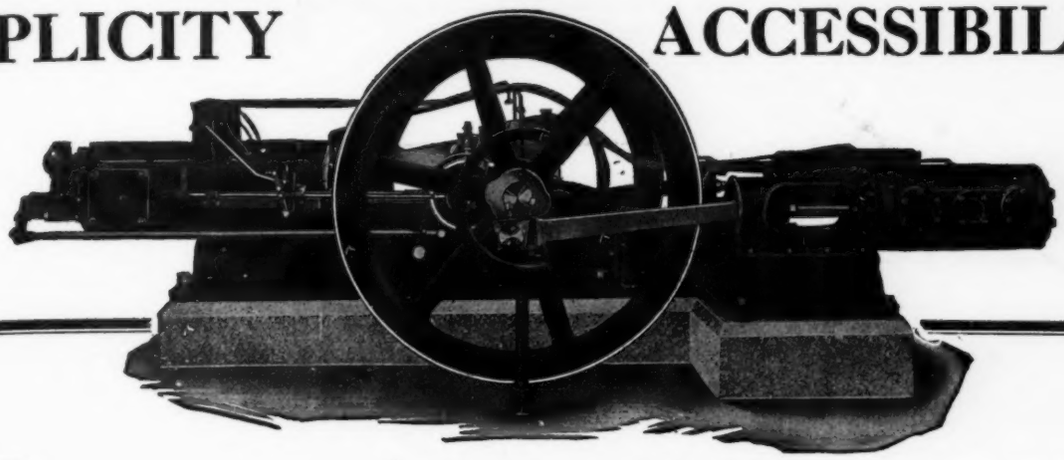
Harrison County—		
V. E. Howze et al, Bryson A-2, Wm. Hays HRS,	¶3	1941

ARCHER COUNTY

Brown et al, Holliday Townsite 1	*	1825
L. T. Burns et al, Turbeville 7-E	200	1473
Carter et al, Benson 1	*	1019
Ted Harris et al, Farmer 2	60	1467
Humble O. & R. Co., Ward 1	45	1045
Marland & Consolidated Oil Co., Ward 5	40	1050
Muse-Robertson et al, Cranfill 1	*	1605
Plains Prod. Co., Lyles 4	95	1457
Pois & Schultz, Miller 4	15	1585
Royal Pet. Co., Wilson 2	75	1549

(Continued on page 96)

SIMPLICITY ACCESSIBILITY



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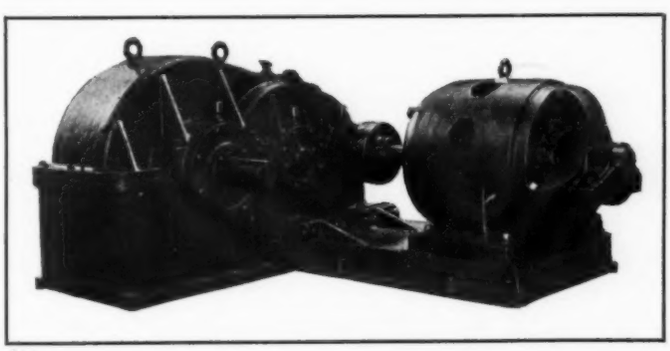

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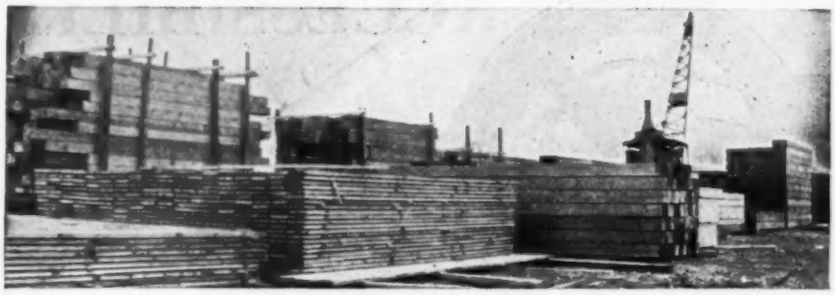

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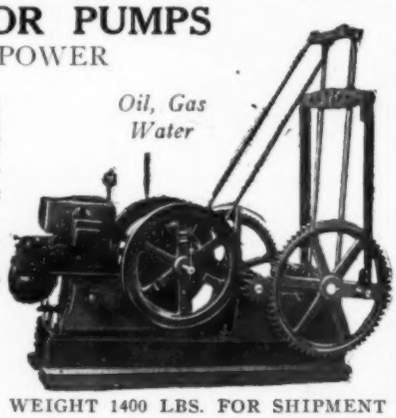

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Catalog on Application
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County, State and General Maps
Township Plats Lease Forms
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1320 Walnut St., Kansas City, Mo.

BURKBURNETT

Company, Well and Location	Initial Production Bbls.	Depth
Magnolia, S. L. C. Ramming 24-B	40	1724

BIG LAKE

Texon Oil & Land Co., Univ. 10-A	†	230

BROWN COUNTY

Amerada Pet. Corp., J. H. Fry 24..	25	1427
Henslee 2	*	1315
Gray et al, Brewer 1	¶15	1168
Magnolia Pet. Co., A. E. Metts 1..	*	1590
A. E. Metts 3	*	1400
J. K. Hughes Dev. Co., Shore 2-A	1200	1325
Shore 4	900	1314
Hays et al, King 1.....	*	1335
Mitcham et al, Keeler 1	*	1435
O'Neille et al, Lane 1	*	1615
Orange et al, Perry 1	¶5	894
Parker et al, Kessee 1	*	1750
Rex-Tex & Py-Tex Oil Co. Fry 12	140	1284
Senior Pet. Co., Williams 1.....	*	1635
Sorrells et al, Davis 1.....	*	1505
Simms Oil Co., Miers 1.....	*	2107
Tidal Oil Co., Arledge 1 .....¶1½-20		1283
Wentz Oil Corp., Shore 11.....	150	1321

CALLAHAN COUNTY

Gibson-Johnson, Jackson 1	*	1215
Navarro Oil Co., Bennett-Booth 1..	150	1646
T. G. Shaw et al, Miller 2.....	*	1691

COLEMAN COUNTY

Schermerhorn et al, Gray 2	*	2533

COMANCHE COUNTY

Moore et al, Braswell 1.....	*	3098

CLAY COUNTY

Empire Gas & Fuel Co., Wright 1.	*	1176

CARSON COUNTY

Marland Oil Co., Burnett 7-A.....	50	3200
McMan O. & G. Co., J. L. Noel 1..	485	3213
Nunn-McAuley Oil Co., Bryan 4..	175	3215
Skelly Oil Co., Schafer 1.....1650		3161

CRANE COUNTY

Eastland Oil Co. et al, University 4	1125	2898
University 8 2600		2898
Humble O. & R. Co., University 3..1050		2965
Independent O. & G. Co., Taylor 48	15	2141
University 1-A 2100		2925
Magnolia, University-Lassiter 2.....	110	3083
McMan O. & G. Co., Hughes 2....	110	2420
Simms & Atlantic, University 4-A..1500		2965
University 1-C, shot	275	2925
Tidal Oil Co. & Turman-Maxwell,		
University 2-F 1560		2925
University 3-F 1100		2960

COOKE COUNTY

Abernathy et al, Hundt 1.....	*	1915
Amerada Pet. Corp., Walker 1	*	2880
American Ref. Co., J. A. Dennis 12	35	1283
J. A. Dennis 13	40	1249
Camp-Hedrick & Oil Operators		
Trust, Kleiss 4	400	1645
Homer Chapman et al, Hemphill 1	*	2500
Oil Operators Trust, Kleiss 2.....	285	1596
Stroube & Stroube, Koelzer 1-B, dd	480	1640
Sun Oil Co., J. A. Dennis 2.....	15	1232

DENTON COUNTY

McMahon & Daniels, Wright 1....	*	2530

EASTLAND COUNTY

Cranfill-Reynolds Oil Co., Spencer-		
Conner 1	840	2995
McLester Oil Co. et al, Thorp 1....2300		2802

ELECTRA

Frank Baldwin et al, Waggoner 3..	*	1943
Bridwell & Mayfield et al, Waggoner		
4	*	1922
Cranfill & Murchison Oil Co., Wag-		
goner 1	35	1258
Magnolia, H&TC Fee 76	25	1673
Simms Oil Co., Waggoner 2.....	*	2273

GRAY COUNTY

Empire, I. B. Hughey 1.....	150	3225
Humble, Binkley 2	175	3174

HARDEMAN COUNTY

Murchison Oil Co., Ayres 1.....	*	3003

HOWARD COUNTY

Magnolia, Mary-Chalk 4	85	1661
Owen-Chalk 8-A	70	1592
Marland Oil Co., Otis Chalk 10....	40	1624
Otis Chalk 6-A	20	1590
H. R. Clay 2	25	1869

HUTCHINSON COUNTY

Company, Well and Location	Initial Production Bbls	Depth
Amarillo Oil Co., Bivins 5-B	¶75	2295
Barnsdall Oil Co., J. E. Pritchard 3, shot	75	2763
Dixon Creek Oil Co., Smith 42	100	2975
Smith 48, shot	800	2895
Dominion Oil Co., Jasper 1, shot	15	3137
Empire, Johnson 6-B, shot	100	2894
J. A. Whittenburg 2, shot	60	3000
Franterhouse & Wetzel, Johnson 2, shot	85	2982
Gulf-Cline & Panhandle Ref. Co., Dial 39, shot	260	2977
W. S. Christian 2, shot	150	2943
Phillips Pet. Co., Perkins-George 6, shot	150	2883
Whittenburg-Cable 23, shot	300	2995
Whittenburg-Coble 24, shot	400	2975
Prairie-Shamrock et al, Merchant 2-B, shot	100	2789
J. A. Whittenburg 1,	¶30	2845
J. A. Whittenburg 3	10	2955
J. A. Whittenburg 1-A	40	2920
Prairie & Phillips Pet. Co., Johnson 12-B	40	2758
Johnson 13-B	120	2784

JACK COUNTY

Buttram Pet. Corp., Preston 3-A	35	2077
Preston 6-C	*	2100
C. K. Cullers 6	40	2109
Empire Holding Corp., Snedecker 1-B	*	1020

K-M-A AND IOWA PARK

F. B. Jackson et al, Munger 1	*	1808
Magnolia, Cullum-Watkins 9	15	792
Panhandle Ref. Co., Riley-Griffith 8	70	1801

MEXIA

Magnolia, J. F. Stout 16	*	3305

MITCHELL COUNTY

California Co., W. A. Butler 1-B	*	3200
Eastland Oil Co. et al, Adams 2	75	3080

MONTAGUE COUNTY

Cato Oil Co., Rolls 13	40	878
Pure Oil Co., Maddox 8-C	35	913
The Texas Co., Dennis 1	*	915
N. J. Howard 3-C	*	1752
J. W. Maddox 11-D	50	946

SHACKELFORD COUNTY

Albany Oil Co., Reynolds 3	45	1371
Gleason et al, McGough 1	*	910
Ramsey & Maxey, Jeter 1	*	1240
Roeser-Pendleton, Inc., Moberly 8-B	*	1420
Stalker Oil Co., Goodwin 1	*	2040

SOUTH VERNON DISTRICT

J. S. Cosden & Consolidated Oil Co., Waggoner 1	45	1232
Fain-McGaha Oil Co., Murphy 1	*	2227
Phillips Pet. Co., Waggoner 14-NN	30	2440

THROCKMORTON COUNTY

Gulf Prod. Co., Graham 3-A	125	1816
Hoffer Oil Corp., Matthews 3	*	1535
Magnolia, M. K. Graham 1	45	3211
Reiter-Foster Oil Corp., Graham 3	120	1833

UPTON COUNTY

Dixie Oil Co., Burleson 23	300	2065
Humble, Ricker 4	25	2233
Roxana, Della Bowen 20	340	2155
TP Coal & Oil Co., Lane 5-A	450	2033

WHEELER COUNTY

Continental Oil Co., J. H. Jackson 2	*	2378
Magnolia, Williams-Laycock 1, ¶5 &	10	2287

YOUNG COUNTY

Atkinson & Sandefer, Ford 1	¶10	3105
Bridwell-Heydrick Oil Co., Hamilton 1	*	950
Panhandle Ref. Co., Matthews 7	10	751
Pitzer & West, Aller Co. Fee 1	35	2140
Reed et al, Jack 7	45	564
Riggs et al, Jones 4	*	545
E. C. Stovall, Fee 5	6600	3900
Winemiller Corp., Miller 1-B	*	823

ARKANSAS

Ouachita County—		
Gulf, R. Bennett 10, 33-15-15	150	2364
Union County—		
Lion Oil Ref. Co., H. Murphy 6, 9-16-15,	40	2713
Magnolia, Saxon 4 5-16-15	20	2260

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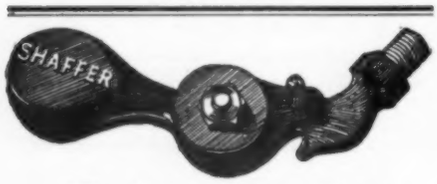

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Wellington Well Flows After Pumping

Denver, Colo.—The action of the Union Oil Company's Plummer 1, 30-10-68, Wellington field, has been one of the most remarkable developments on the structure. The well did not flow when first completed and produced very little oil with a large amount of water when pumped. The well was pumped steadily for more than two weeks as an experiment. Oil appeared in small quantities and gradually increased as the water decreased. The well finally began to flow of its own accord and is now producing nearly 500 barrels daily with almost no water. The sand was first drilled through after water had been found on the top of the formation. The water has been almost completely drowned. The action of the well may change the company's policy toward stubborn and stingy producers.

Poso Creek Wildcat Has Showing of Oil

Bakersfield, Cal.—Showings of oil in brown shale and thin streaks of sand have been found in the Barnes Oil Company's wildcat well on section 20-25-29, in the Mount Poso Creek region, and the 11-inch casing is standing cemented at 1385 feet, 275 feet above bottom of the hole.

The Barnes Oil Company's operations are in the Upper Kern River district of Kern County.

Test Near Los Angeles Making Oil and Gas

Los Angeles, Cal.—Smith Brothers' wildcat well at Lawndale, Cal., a small town about 10 miles southwest of here, is showing considerable gas pressure and producing about five barrels per day from 6215 feet.

The well, which landed 590 feet of four and three-quarter-inch liner on bottom, builds up about 700 pounds pressure when shut in.

Application Pending for La Barge Pipe Line

Casper, Wyo.—The much talked-of pipe line to be laid from La Barge field to some point on the Union Pacific railroad, now seems to hinge upon the outcome of the application of the California Petroleum Company to the Wyoming public service commission. No apparent reason is known why the company will not be given permission to construct the line. Several other companies have considered laying a pipe line but have been dubious of the crude supply. The California Petroleum Company controls a huge block of acreage in the field. Among the companies considering the building of pipe lines in the past was the Texas Production Company. Oil is now trucked from the field to Kemmerer, the point most likely to be touched by the new pipe line.

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Appeal Osage Income Tax Exemption Decision

Washington, D. C.—The tax exemption of non-Indian operating lessees of Osage oil lands will be fought by the Department of Justice, which has asked the United States Supreme Court to review a decision of the Circuit Court of Appeals for the Third Circuit holding that the income from the sale of such oil was exempt from taxation under the revenue act. The decision was rendered in the case of the Colonial Trust Company, executor of the will of Glenn T. Braden, deceased, and held that to tax the income derived by a non-Indian thus operating on the tribal lands was to tax the Indians.

Braden was an operator in the Osage Indian country. He procured an oil lease from the Osage Tribe and as a result of his development of the land thus leased, during the period from 1917 to 1921, produced oil in large quantities from which he derived an income during that period upon which there was assessed and collected income and excess profit taxes in the sum of $822,-346. Braden died in September, 1923, and the executor filed suits to recover the taxes thus paid. Judgments were obtained against the government in each case and these judgments were affiarmed by the Circuit Court.

The department, in a petition to the Supreme Court for certiorari to review the decision, and in a brief supporting the petition, contends that the court below was in error in exempting such income from taxation. The department points out that the income tax statutes cover the income of all individuals from any source whatsoever, with only those exemptions provided in the act. "The act does not by its terms exempt income derived by leases of Indian lands from operations under their leases," it is asserted. "The court was not warranted in reading into the statute an implied exemption. Reading into the statute an implied exemption of Indians' income is going far enough in support of the governmental policy toward Indians."

The petition further states that under the revenue laws the Bureau of Internal Revenue has consistently held that income derived from operating lessees of Indian lands is taxable. "This is the first case in which any decision has been rendered to the contrary," it is pointed out.

The theory advanced to sustain the decisions of the lower courts is that "the taxation of the income of Indian lessees throws a burden on the Indians, because if the lesee were exempt from taxation on the income he derives from the operation of his lease he would probably take that into account in negotiating the lease and offer a higher royalty than he would if he must pay income taxes." The brief of the department contends that this "is altogether theoretical and not practical."

WANTED: To buy producing royalties under developed or partially developed oil properties in Texas, Louisiana, Oklahoma, New Mexico or Arkansas.
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DIVIDEND NOTICE
Imperial Royalties Company
Will pay monthly dividend of 1½% to Preferred Shareholders on April 30. This is Dividend No. 79 and makes a total of 139% paid to shareholders.
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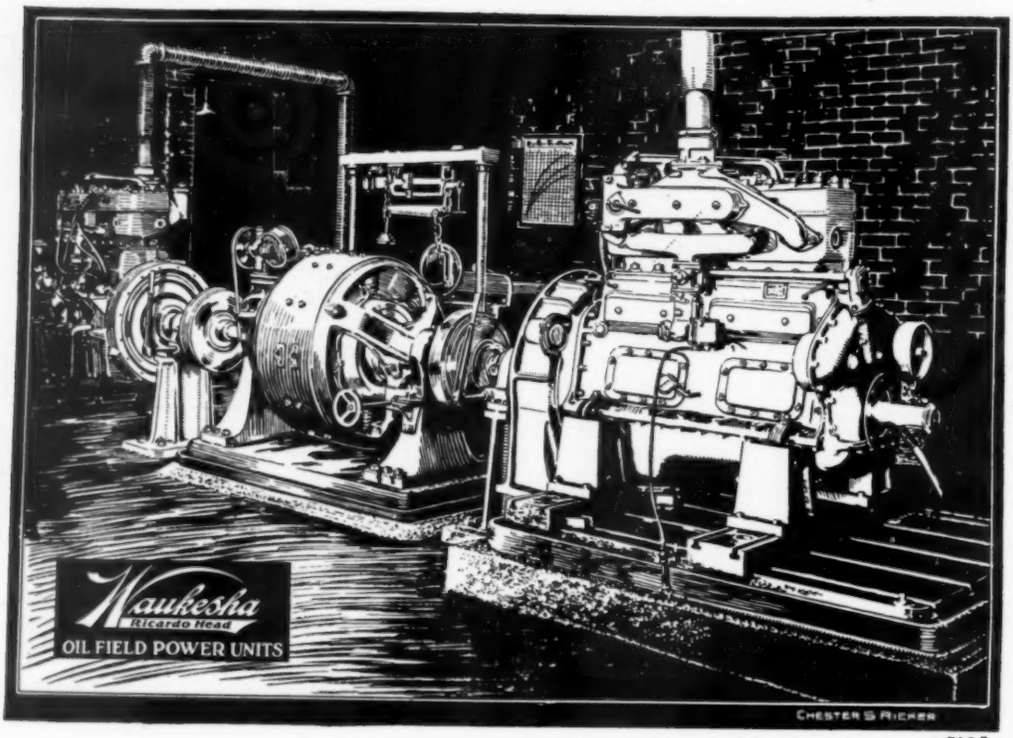
Testing Heavy Duty Waukesha "Ricardo Head" Engines on Electric Dynamometer



p-716-L

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The Seminole Oil Boom had started—engines were wanted overnight—field stocks melted like an April snow—but shipment after shipment, rushed by express, protected our customers. Rush, rush, rush, at factory, on train, and at the field was the word but not in our test department. Each engine had its allotted hours under load—was carefully torn down—inspected—reassembled and tested again before shipment. That's why on a recent rush shipment 37 out of 37 started on the first pull of the crank and kept right on running night and day.

Waukesha Oil Field Power Units are made in sizes varying from 30 to 125 horsepower and can be obtained in either portable units completely weather proofed or in stationary ones for use in a building. Write for our latest Oil Field Bulletin No. 600 describing them.

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NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

Bolt Machine Designed For Quantity Work

A bolt threading and cutting machine of the geared head type, particularly designed for high production, has been placed on the market by the Williams Tool Corporation, Erie, Pennsylvania, after several years of experiment and test.

The machine is compact, follows the modern trend of machine tool design by having the motor at the base instead of above, and is said to have other new and important features.

This new bolt machine uses large die-holders to support small renewable dies of high-speed steel. The large die-holders do not have to be removed from the head in order to change dies.

To cut a different size thread, the operator can quickly change dies simply by loosening the locking screw and taking the die from the holder—changing the whole set in a few seconds.

The operator has complete control of the machine from one position, and can get seven different speeds by operating only two levers.

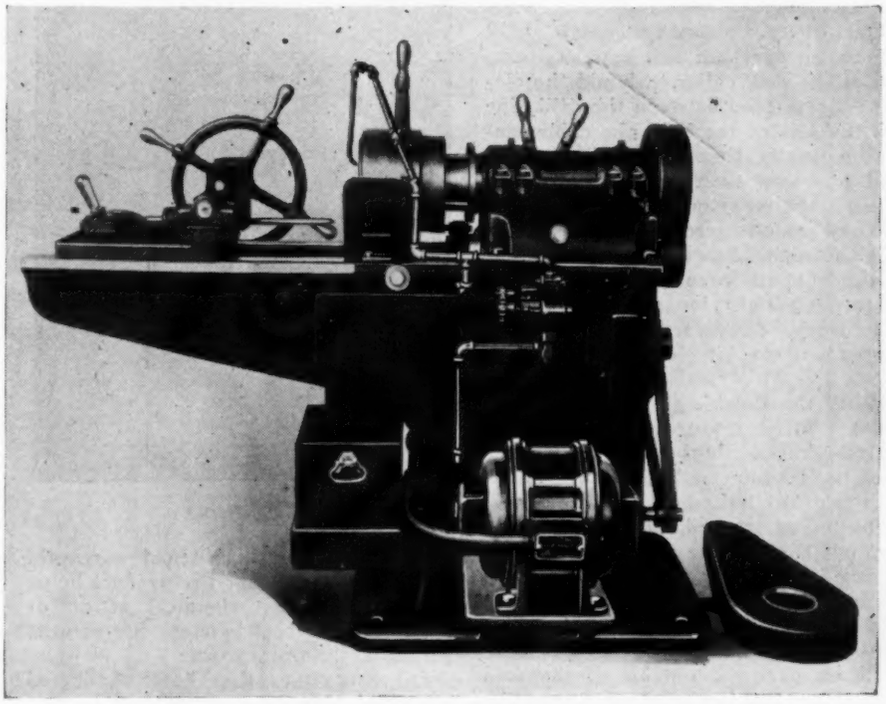
To change gears it is only necessary to ease out on the clutch, which permits the placing of one or both gear shift levers. A speed plate back of the levers gives the correct position for each size of bolt.

Another outstanding feature of the machine is the simplicity of the automatic die head. The several parts—die head, die head support, cam, cam ring, die holders and shell—are all enclosed, forming one compact unit.

The shell, which is controlled by compression springs, travels backward and forward on the die head and in turn opens and closes the dies. The head is adjusted by pulling the lever forward, and is released by a trip rod adjusted in the carriage.

This trip rod can be set to give any desired length of thread within the capacity of the machine. The dies are adjusted by releasing the cam ring from the shell. A spanner wrench engaged in the cam ring, is moved backward or forward in order to give a larger or smaller adjustment, for the size of thread to be cut. The cam ring is then locked to the shell, holding the die-holders in a fixed position.

More information can be had from the company on request.



RAPIDUCTION BOLT MACHINE MADE BY WILLIAMS TOOL CORPORATION

Hex-Top Grease Cups Accessible

Hex-Top Grease Cups, recently introduced to the trade by Link Belt Company, 910 S. Michigan Avenue, Chicago, should find a wide application in oil field work.

The shape of the cup is six-sided, giving, it is said, an easy purchase for any type of wrench and a good grip for the hand.

The combination of compression grease cup and Alemite fitting adds to the usefulness of the cup.

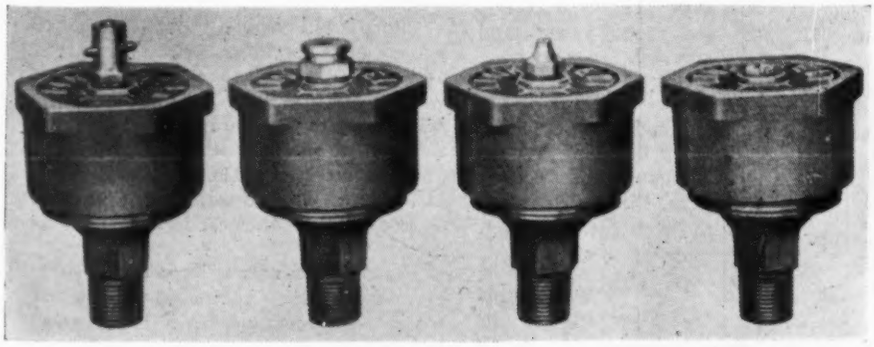
An example of this would be in the lubricating system of a long belt conveyor using many grease cups for the idlers; here the easiest, quickest, and most economical way to fill all the cups at one time, it is said, is with a grease gun applied to the Alemite fitting, when the cap is turned up to a high point, but not entirely unscrewed or removed.

The fillng can be done without waste of grease, and without any inconvenience; the cup holds a good reserve for use of the compression feature; and an occasional slight screwing down by hand or wrench is all that is necessary until it is time to have a general refilling of the cups.

If a bearing gets warm when the grease gun is not at hand, a turn or so of the cap takes care of the emergency.

The fact, moreover, that the cup may be readily filled in even the most inaccessible places is due to the "Hex-Top" head as well as to its fillings.

More information can be obtained from the company by request.



HEX-TOP EASE CUPS

Time Saving Feature of New Bit

A new rotary drill bit involving what are said to be unusual features has been patented by C. W. Herrin, Kansas City, Kan.

A big saving of time is claimed for the bit, due to the fact that the action throughout is forced. Continuous circulation and elimination of the pulling of the drill pipe are among its advantages. An automatic elevator also adds to the effectiveness of the outfit.

In operation of the bit, the drill pipe is raised 10 or 15 feet off the bottom, the automatic elevator is adjusted by

rotating its bottom section until the compression lugs in the elevator are in a grab position.

By lifting the grip rings from the rotary table, the elevator may be lowered by a single cable through the table opening over the outside of the drill pipe as an overshot to engage the top end of the drill collar. Should the elevator sleeve bind between the drill pipe and the side of the hole, the cable tension naturally becomes slack and the drill pipe can then be pulled upward through the elevator.

When again lowered, the elevator will grip the pipe, allowing the full weight of the pipe to force it down past the obstruction until loosened, so it can slide freely downward to engage the top end of the bit sleeve, or drill collar.

When the slidable section of the drill collar is lifted, it automatically releases the compression lugs in the drill collar from the bit joint and allows the collar, with two bits bolted to its bottom end, to be pulled upward, drawing the bits through slots in the chuck. Upon engaging 45 degree angles cut in big joint, the bits will be forced out until they are in a free position flat against the sides of the pipe. It then can be pulled by cable up over the outside of the drill pipe above the derrick floor, where the nut is removed from one and one-half-inch bolts holding the bits in place, and allowing them to be removed and replaced.

The lower section of the automatic elevator then is adjusted to release position by reverse rotation and the drill collar, when new bits are attached, can be lowered into the well. It cannot release drill collar, however, while being lowered until the bits are in drilling position. The bits are turned inward by a 45 degree angle at the top end of the chuck, which is the bottom end of the drill pipe, where they are wedged into a groove in the chuck, being locked rigid.

More information can be secured from the Landen Advertising Company, Kansas City, Missouri.

Cement Admixture for Oil Well Jobs

Cleveland, Ohio.—Perfection of an admixture for cement, which is effective in handling serious cementing probdems, is announced by the Master Builders Company of this city. Such an announcement is of special interest to the oil producing industry, inasmuch as the admixture has been tried out on oil well cementing jobs and has been found successful.

In 1926, Master Kem, as the cement is called, was put on the market, and the product mixed with cement has withstood remarkable laboratory and field tests.

It is claimed by the company that this cement has proven itself effective in making a permanent bond between casing and side walls; shutting off water, quickening acceleration of the set, producing early high tensile strength, and in increasing high tensile strength.

It is also said that the product helps to neutralize the chemical action of bottom water and renders the cement permanently waterproof.

Oil companies that have conducted experiments with Master Kem include the Sinclair Oil and Gas Company and the Empire Oil Company.

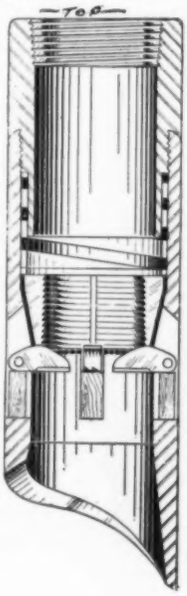
Arrangements have been made to have dealers established in the various fields.

W. S. HOVEY

LeBus Announces New Pipe Cutter

The LeBus outside drill pipe cutter is the latest addition to the oil field products of the LeBus Rotary Tool Works of Electra, Texas, manufacturers of the Eureka tongs and the LeBus cathead and other oil field specialties.

The construction of the LeBus combination outside drill pipe cutter permits the use of a milling type cutter that can not dig in while cutting and can be run with the tooth slip and the fish pulled out after the cut is made. Or, it can be run with blank slips and the cut made and the tool pulled out and re-run with the tooth slips.



The cutter passes over drill pipe collars and tool joints and cuts off the pipe by a spring pressure on the cutters and the cut can be made at any point along the joint of pipe. Pumping can be done over the outside and the pipe cut in a minimum of sections.

Further information may be obtained by communicating with the company direct.

Hovey New President of Fairbanks-Morse

New York.—At an annual meeting recently of the directors of Fairbanks, Morse & Co., W. S. Hovey was elected president, the former president, C. H. Morse, becoming chairman of the board. This is the first time this position has been held by a man not of the original Morse family.

Born in 1875, and a graduate of Cornell, Mr. Hovey joined the Sheffield Car Company, an affiliation of Fairbanks-Morse, in 1902, as assistant superintendent. Later he became superintendent, which position he held until 1913, when he was transferred to the Beloit works of Fairbanks-Morse as manager of the engine division. A few months later saw him general manager of that plant.

In 1919, Hovey was elected vice president in charge of all the manufacturing activities of Fairbanks-Morse and in 1924 was made general manager of the entire business.

His elevation to the presidency brings a man to the helm of this company who has worked his way up through the ranks. His thorough grasp of all factors of this widely extended business makes him, in the opinion of his associates, well suited for the new office. He will remain general manager.

Trailer Company Adds New Factory

Augusta, Kan.—Construction work is under way on a new factory here for the Spencer Trailer Company, manufacturers of trailers for the oil industry and other industrial concerns. The new plant will be located in the east section of Augusta with trackage facilities provided both by the Frisco and Santa Fe railroads.

F. G. Spencer, president and originator of the well known Spencer trailer, is the directing head of the company and is personally supervising the construction of the new plant. The new structure has been made necessary by the rapid expansion in the company's business which now includes many of the oil fields of the United States as well as foreign countries.

The main building will afford 25,000 square feet of floor space and is in addition to the space afforded by the warehouse to be constructed as adjoining units to the factory. The factory will represent an expenditure of approximately $150,000 and the plans call for the erection of additional units as the growth of the company will demand.

The company now is located in quarters alongside the Santa Fe railroad, which was occupied several years ago, but which now has become inadequate for the needs of the business.

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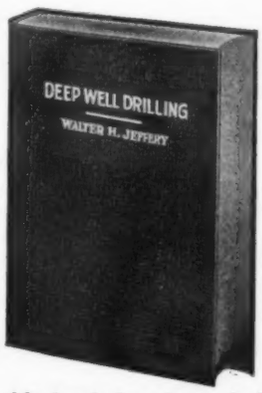

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DUNN TOOLAGRAM

"Show me," said Bill,
- - - - - and we did.

I'm sorry, dear readers, that this little visit today must be advertising. Can you imagine an esthetic little cuss like me getting down to the level of commercialism with my art? (No, Efficiency, it positively is not "bull." When you get it down as fine as I have, it's an art.)

Well, anyway, the big chief back in Oxnard says to me the other day, says he—Safety, what the h— do you think we got you for any way?—because of your beauty? You chew the fat for half an hour every other week in that squeaks column and you never say a word about our tools. Now listen, if you don't tell those fella's something about Dunn Tools pretty soon, I'm going to kick the seat of your pants clean out into that swell bay they have up the coast.

So, there you are, and here I am, and that's that. What's a fella going to do. There ain't no appreciation of art any more, anywhere. All these guys think about is jack. Just imagine me haven' to use my artistic ability in the commercial pursuit of business. And anyway, Dunn Tools don't need talkin' about. They speak for themselves.

Holy cats,—here I've wasted my whole time grievin' about my luck and haven't said a word about the tools. I started off to tell you about Bill Speed and some Dunn Rotary Tongs, and got clean off the track . . . Gosh . . . Guess I'm in for it now . . . If you don't see me here week after next just remember what the boss said about the seat of my pants . . . and . . . yes . . . I like violets best."

Yours

Dunn Safety

(For the Triplets.)

SQUEAKS FROM THE BULL WHEEL

Asking For It

Him—I wish I dared ask you a very important question.

Her—Why don't you?

Him—I see a negative in your eyes.

Her—In both of them?

Him—Yes.

Her—Don't you know that two negatives makes an—why, Charlie, how dare you?—The Weekly Scotsman.

The Longest Way Round

"Do you mean to tell me that you have lived here ten years and cannot tell me the quickest way to the station?"

"I've been a taxi driver all these years."—Notre Dame Juggler.

Kind Henry

"Don't you sometimes wish your wife had married some other man?" asked Smith.

"No," replied Henry Peck. "I hold no grudge against any man, but I have wished a good many times she had remained an old maid."—Cincinnati Enquirer.

Somewhat Forewarned

I heard Hardupp's store was burned to the ground last night. They say you could see the fire a long way off.

Yes, I saw it six months ago.

Only Explanation

Can you explain why it is, Mary, that every time I come into this kitchen I find you reading?

It must be those rubber heels of yours, mum!

Facing the World

Betty (aged seven)—Our family is awfully exclusive. Is yours?

Bessie (aged eight)—No, indeed? We haven't anything to be ashamed of. —Boston Transcript.

In God He Trusts

Pastor—"So God has sent you two more little brothers. Isn't that fine?"

Dolly—"Yes, and He knows where the money's coming from to keep them. I heard Daddy say so."

I'll Bite, Too—Why

"Oh, Peter, how you have growed since you went away to college!"

"Grown, girlie, grown."

"Why, what should I groan for?"

Try Rub-No-More

"What's good for my wife's fallen arches?"

"Rubber heels."

"What shall I rub 'em with?"

Fiery Language

"Madam, do you mind if I smoke?"

"Oh, dear me, no. I don't give a hang if you burst out in flames!"

Vocational Education

The keen-eyed mountaineer, realizing that his son was much behind in his education, decided to do what he could for him, so he led him into a country school house and said to the teacher in charge: "This here boy's arter learnin'. What's on your bill o' fare?"

The teacher, not realizing the mountaineer wasn't familiar with all subjects, said: "Our curriculum, sir, embraces geography, arithmetic, trigonometry—"

"That'll do. Load him up well on triggernometry. He's the only poor shot in the family.

Uses Marion "Non-Squeak Brake Ease

"Your mule," said Sambo, to an old darkey whose mule seemed to have declared travel for the day concluded, "doesn't seem to be hittin' on all six."

"Nossuh, he don't," agreed the owner, "but he sho' am wukkin' good on all fo' brakes."—Marion Line.

Code of Honor

The boys and girls of a congested neighborhood were invited by their teacher to write their own personal rules of life. The collection included the following:

"You must always be obigent, clean your neck, stand ereck, and swallow good fresh hair."

"Don't get nosey or hit anybody with cross eyes because it gives you bad luck."

"Never try to steal a dog's bone or you'll have no pants."

"Always live fair and never ask your father or uncle for money when they are drunk."

"Don't steal from the Five and Ten and if you hit a girl you are a coward."

"Every week you must have a bath and don't do no murderin."

Father in Suspense

Bobby—"Did you hear the stepladder fall, Mom?"

Mother—"Yes. I hope your father didn't fall."

Bobby—"He hasn't yet. He's hanging to the picture moulding."

He Spoke Out of Turn

The boss employed two colored men, and one morning one of them failed to show up for work.

"Where is Sam?" he asked the one that came.

"In the hosipitle, boss."

"In the hospital? How did that happen?"

"Well, Sam, he done been tellin' me eve-y mo'nin' foh ten days he gwine lick his wife cause o' her naggin'."

"Well?"

"Well, yistiddy he tole me again an' she done ovehhea'd him, da's all."

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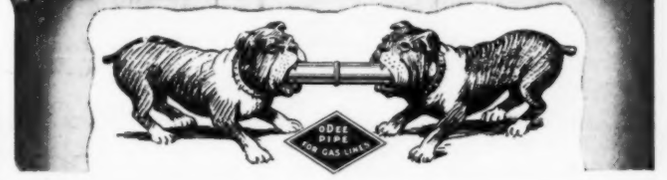

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